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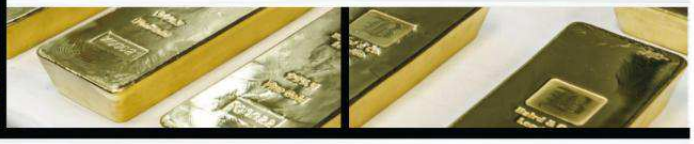

MOTOR TREND **(ISSN 0027-2094) May 2018, Vol. 70, No. 5.** Published monthly by TEN: Publishing Media, LLC, 1212 Avenue of the Americas, 18th Floor, New York, NY 10036.
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Periodicals Postage Paid at New York, NY, and at additional mailing offices. **SUBSCRIPTIONS:** U.S. and U.S. Possessions $18 for 12 issues. Canada $30 per year and international orders $42 per year (including surface mail postage). Payment in advance, U.S. funds only. **POSTMASTER:** Send all UAA to CFS. (See DMM 707.4.12.5); NON-POSTAL AND MILITARY FACILITIES: send address corrections to: ***MOTOR TREND***, P.O. Box 420235, Palm Coast, FL 32142-0235.

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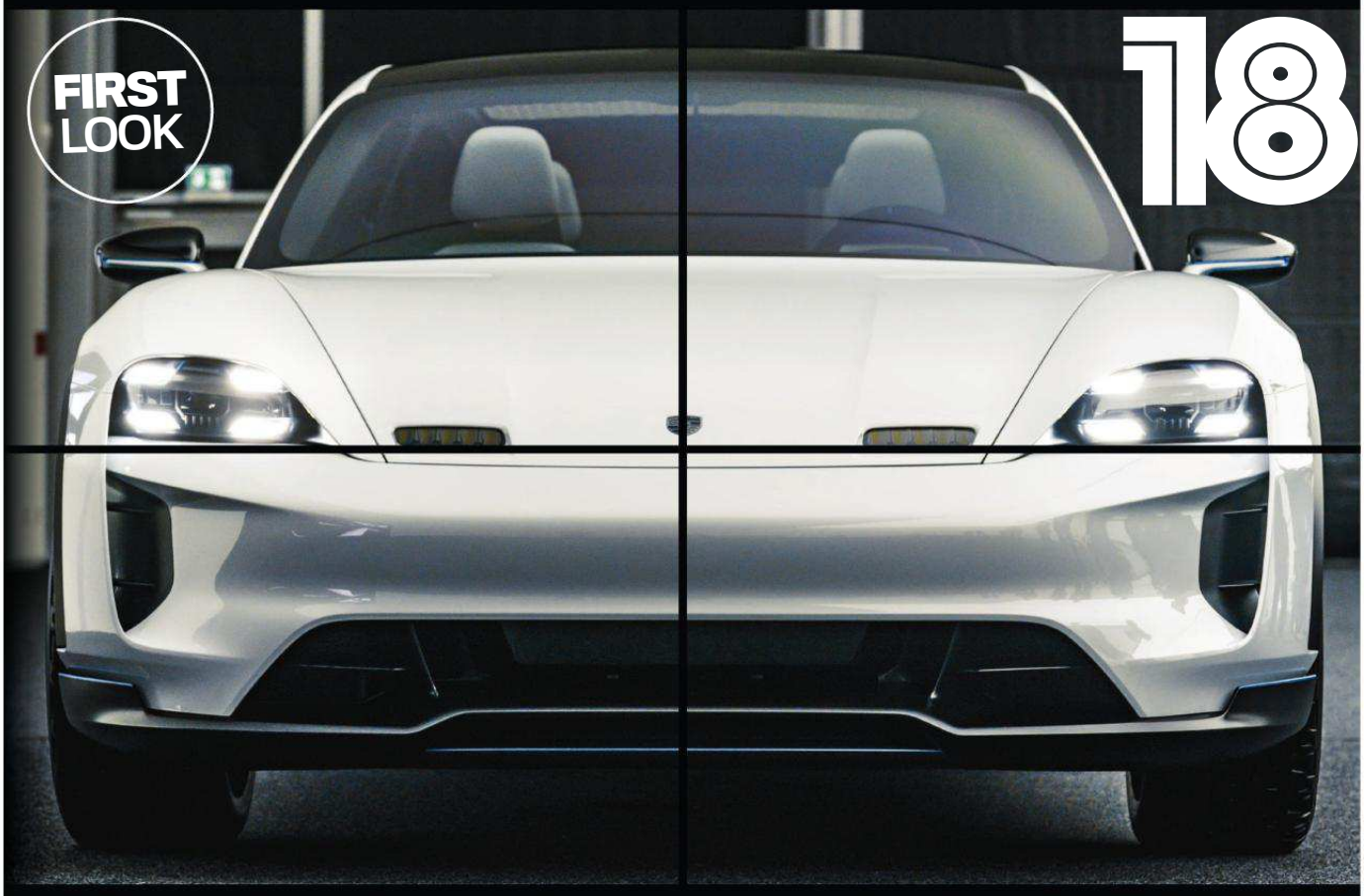

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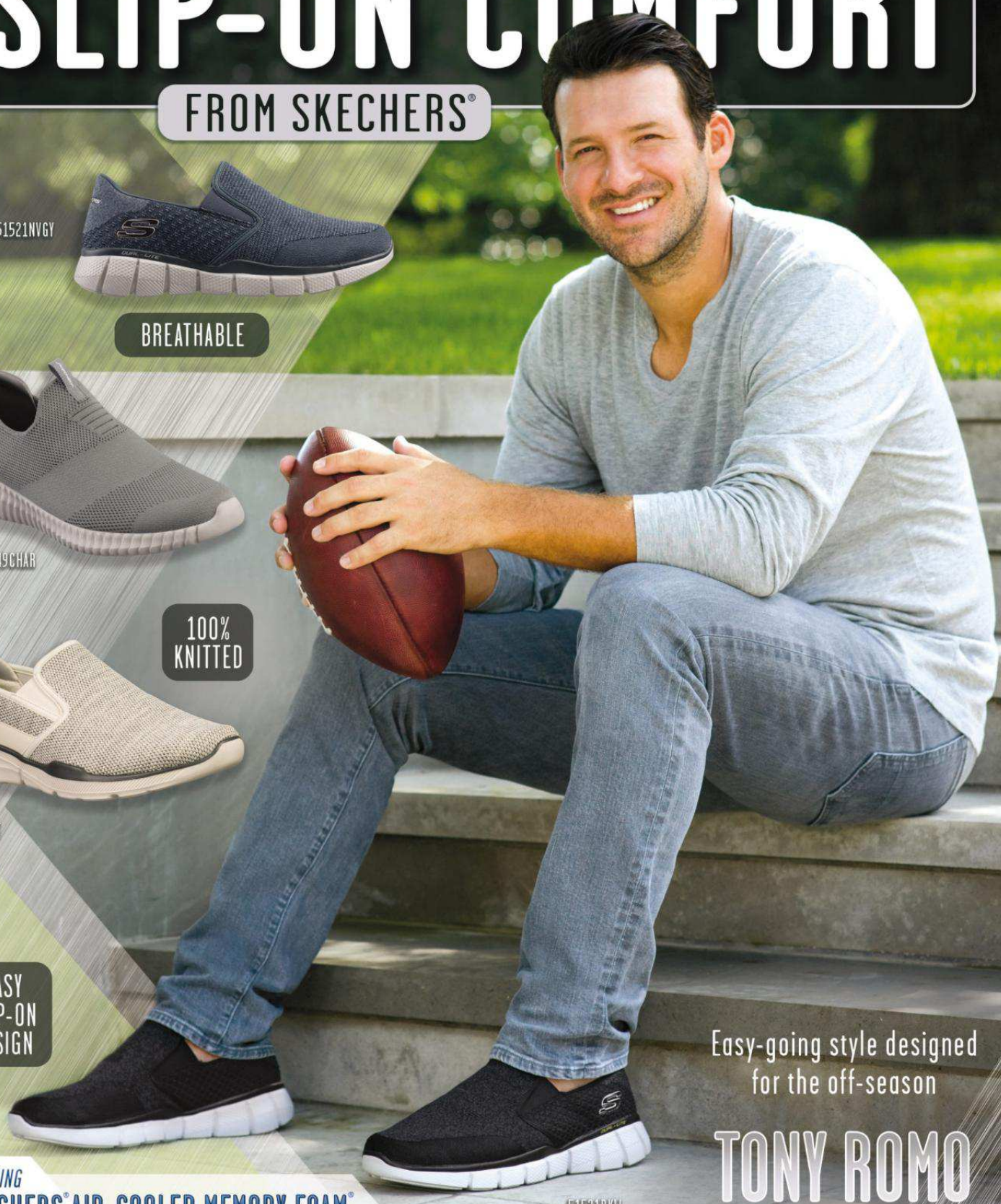

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MOTOR TREND EN ESPAÑOL?

MOTOR TREND EN ESPAÑOL

PRUEBAS NOVEDADES VIDOS GUÍA DE COMPRADORES (EN)

La portada de este mes cubre la magia de las búsquedas de internet y los automóviles, y aunque es un poco descarada, insinúa cómo se entrega y se consume una porción importante del contenido de *Motor Trend* todos los días.

Lectores como usted ayudan a que nuestra revista mensual tenga una circulación de 1 millón de copias en promedio (gracias), pero en un buen mes, casi el doble de lectores encuentran nuestras noticias, reseñas y consejos de nuestra guía del comprador en MotorTrend.com a través de buscadores como Google.

Y eso es únicamente si quiere leer nuestro contenido en inglés; tenemos versiones impresas de *Motor Trend* en chino y coreano, y publicamos sitios de internet en francés y español.

Motor Trend en Español comenzó a principios de los años 2000 y sirvió a nuestra audiencia de habla hispana con una revista y un sitio de internet, MotorTrendenEspanol.com. El trabajo cuidadoso de nuestro colega Sidney Hidalgo ha mantenido vivo a *MTEE* y nuestras otras ofertas internacionales durante todos esos años—pero el crecimiento de nuestra versión en español realmente se disparó cuando Miguel Cortina se unió a nuestro equipo en enero de 2015.

Si ese nombre suena familiar, es porque Miguel es un contribuidor activo de nuestras versiones en inglés y en español de *Motor Trend*. Su nombre y sus perspectivas han aparecido muchas veces en esta revista, y él ha sido juez en nuestros programas SUV del Año y Camioneta del Año.

Antes de que Miguel llegara a nuestro equipo, nuestras ofertas en español consistían prácticamente en traducciones de *Motor Trend* hechas por terceros. Él todavía maneja ese proceso, pero también escribe reseñas originales y noticias en MotorTrendenEspanol.com que están dirigidas al creciente público Latino en Estados Unidos y el mundo. Por si eso no fuera suficiente, Miguel es un batallón de una persona cuando hablamos de redes sociales. Lo puede encontrar en las cuentas de *Motor Trend en Español* de Facebook e Instagram y en Twitter en @MTEspanol.

O, ya sabe, búsquelo en Google. Gracias por su apoyo. ■

MOTOR TREND ON DEMAND

What's On Demand This Month?

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APRIL 2	ROADKILL Ep. 79
APRIL 4	IGNITION Ep. 190
APRIL 6	DIRT EVERY DAY Ep. 75
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APRIL 20	JUNKYARD GOLD Ep. 7
APRIL 23	ROADKILL GARAGE Ep. 29
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This month's cover riffs on the magic of internet searches and automobiles, and although it's a bit cheeky, it hints at how a significant portion of *Motor Trend* content is delivered and consumed every day.

Readers like you help drive our monthly magazine circulation to an average of 1 million copies (thank you), but in a good month, nearly twice as many readers find our news, reviews, and buyer's guide insights online at MotorTrend.com via search engines like Google.

And that's just if you want our content in English; we license print versions of *Motor Trend* in Chinese and Korean, and we publish websites in French and Spanish.

Motor Trend en Español began in the early 2000s and served our Spanish-speaking audience with both a magazine and a website, MotorTrendenEspanol.com. Our colleague Sidney Hidalgo's careful stewardship has kept *MTEE* and our other international offerings alive all of these years—but the growth of our Spanish-language version really took off when Miguel Cortina joined our team in January 2015.

If that name sounds familiar, it is because Miguel is an active contributor to both the English and Spanish versions of *Motor Trend*. His byline and insights have appeared several times in this magazine, and he's been a juror on both our SUV of the Year and Truck of the Year programs.

Prior to Miguel's arrival, our Spanish-language offerings consisted almost entirely of third-party translations of *Motor Trend* content. He now manages that process, but he also publishes original drive reviews and news on MotorTrendenEspanol.com that target the growing Latino audience in America and abroad. If that's not enough, Miguel is *Motor Trend*'s one-man wrecking crew when it comes to Spanish-language social media. You can find it on the *Motor Trend en Español* Facebook and Instagram accounts and on Twitter @MTEspanol.

Or, you know, just Google it. Gracias for your support.

Spanish translation by Miguel Cortina.

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THEY SAY P32 INTERVIEW
CARLOS TAVAREZ, GROUPE PSA

FIRST LOOK
COMING IN LATE 2019

2018 GENEVA INTERNATIONAL MOTOR SHOW

Porsche's Tesla Killer

Words Alisa Priddle

MISSION E CROSS TURISMO IS A FAST-CHARGING, LOW-SLUNG WAGON

Elon will have to reckon with a new fast gun in town when it comes to battery-powered SUVs.

When Porsche brings its first pure electric vehicle to market in late 2019, it will bear a strong resemblance to the Mission E Cross Turismo unveiled at the Geneva auto show.

This is the second iteration of Porsche's Mission E concept—which bowed in 2015 as a four-passenger sports car with suicide doors and a pledge to beat Tesla with more than 600 horsepower, 440 kW and an 800-volt system to charge its lithium-ion batteries twice as fast. Since then, Porsche has honed the engineering while finalizing the body style and design, part of a $622 million investment in the new electric platform.

The Cross Turismo is a low-slung yet rugged four-passenger crossover, smaller than a Panamera but carrying the familiar Porsche roofline and haunches. The goal was to keep the Porsche DNA intact but make it blatantly obvious that this is an e-Porsche, a new creature on the road.

Although many cool European wagons never make it to the U.S, this is a global vehicle, so North America gets it, too. Porsche has built two prototypes, both in light gray metallic paint, said Michael Mauer, vice president of Style Porsche. It was important that the Mission E family retain brand identity with flat hoods, pronounced fenders, a tapered roof, big rear shoulders, and a sculpted rear.

With features like headlamp shapes that differ with each model, Mauer wants Mission E vehicles to be instantly recognizable as electric vehicles. The trick was determining how different. He thinks he got it right with the Cross Turismo. In an exclusive interview with *Motor Trend* ahead of the Geneva show, he admitted the production car has been in development

LEGALESE It's unclear whether the illuminated lettering is street-legal, but no law prohibits the E from flashing in the garage or driveway to show the state of charge.

alongside the concept. Hence, what you see here is close to what we're going to get. The name is still being vetted.

The Cross Turismo headlights are rectangular with rounded corners. Each unit sits inside an air intake and appears to be floating. There is no grille, and the body-colored lower airflow vent presents a closed-nose look in keeping with Porsche design heritage, said Peter Varga, director of exterior design. Where exhaust pipes would be, there is now an air diffuser.

The light bar across the back will be a signature feature, with "Porsche" lit up in white against a background of blue lines. The E in the nameplate pulsates while charging.

This is no ordinary EV. Like the first Mission E, the 440-kW system sends power through two permanent-magnet synchronous electric motors, enough to go from 0 to 60 mph in less than 3.5 seconds and 0 to 124 mph in under 12 seconds—with repeatable track performance. Driving the prototypes, Mauer has come to appreciate performance without sound: "It's like driving a jet."

Charge ports on both sides open with a touch. The 800-volt charging system can work through induction, a charging dock, or Porsche's home energy-management system with a claim of 250 miles of range in 15 minutes. Porsche is spending $870 million on charging infrastructure, working with dealers in the U.S. on a fast-charging network and with other automakers in Europe as part of the Ionity network.

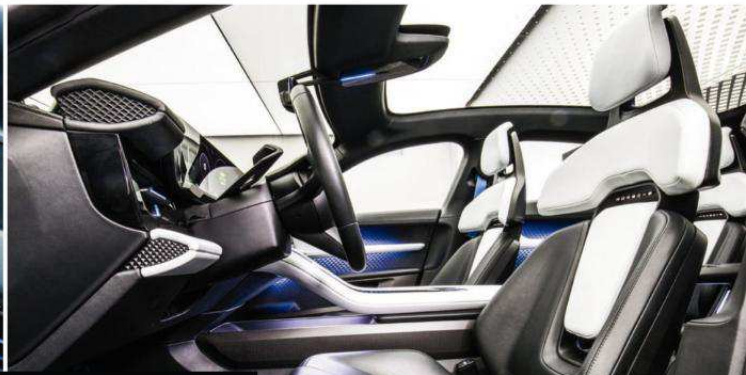
This is not Porsche Lite. The Cross Turismo has 20-inch wheels, Dynamic Chassis Control, rear-axle steering, all-wheel drive with (perhaps brake-based) torque vectoring to each wheel, and air suspension to raise the ride height almost 2 inches.

The interior of the first Mission E concept was Porsche's vision of the future, said Ivo van Hulten, director of interior design. "This is closer to something we could do mass production of," he said, clarifying that 70 to 80 percent of the interior is feasible. The instrument cluster is curved toward the driver to provide a cockpit vibe. Eye tracking software recognizes which display the driver is viewing and moves it to the foreground. The screen continues across the dashboard to access various controls. Touchscreens in the door adjust the seat, those below the vents adjust airflow, and another is the on button. One sad note: The molded bucket seats are concept only.

Those familiar with Porsche's wild array of buttons and switches will find them noticeably absent. "We want people to recognize they are sitting inside an electric Porsche," van Hulten said.

Mission E was not designed just to go after Tesla. "We are so self-confident we say there is no competition," Mauer said. "The whole auto world should be worried."

The Cross Turismo will be the first Mission E but certainly not the last. After all, this is Porsche. There will be derivatives. **Alisa Priddle**



THE EYES HAVE IT The Mission E has three displays and uses vision detection to bring the desired info to the foreground.

Intake

FIRST LOOK

Supra goes racing

GAZOO UNVEILS CONCEPT TRACK CAR THAT TEASES PRODUCTION MODEL

It ain't the actual production-spec Toyota Supra, but if you squint a bit and use your imagination to remove some of the racing bits like the huge rear wing and all the intake scallops, there you have it.

It's been two decades since a Supra last graced a Toyota showroom floor in America, and the GR Supra Racing Concept unveiled at the Geneva Motor Show is the closest indication of the next iteration, which will arrive in dealerships early next year.

In this instance, "GR" stands for Gazoo Racing, Toyota's racing and go-fast parts operation. It's a pet project of Akio Toyoda himself, so you know this car means business.

The concept's composite hood, front and rear bumpers, front splitter and rear diffuser, side skirts, door mirror housings, and rear wing likely will be replaced with aluminum or other lightweight materials in the production version. But you can expect those composites to be available through the aftermarket.

Toyota supplied dimensions for the concept—wheelbase 97.2 inches, length 180.1 inches, width 80.6 inches, height 48.4 inches—but those are for a race-spec car, so comparing that to a future production model isn't a good idea.

But it's in the exterior design where we get the best clues. It's actually pretty close to the FT-1 concept seen at the 2014 Detroit auto show. (Has it really been four years since they showed that? Indeed it has.)

Up front, the FT-1's F1-styled hawk nose and double air inlets have been replaced by a three-inlet setup. But the squinty headlights remain. Going around the side, the giant scoop at the B-pillar is now more of a hint. The gaping rear ducts seem relatively intact, as is the swoopy, peaked rear deck.

The interior is set up for racing (which is cool), but there is nothing to be gleaned from it regarding the production Supra.

The Supra first arrived on the scene in 1978 as a more powerful A40 trim level to the Celica. But it gained its own nameplate with the A60 in 1981 then evolved into the A70 in 1986 and A80 in 1993. Given the huge "90" splashed on the door panel of this concept, it's pretty clear the new version is code-named A90.

However, whereas past Supras were developed internally by Toyota, this version shared R&D with BMW for its next Z4. And although Toyota gave few details about the Supra, sources say the cars will share many underpinnings, including powertrain and suspension setups. **Mark Rechtin**

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Intake

2018 Buick Regal GS FIRST DRIVE

SPECTACULARLY SUPPORTIVE The perforated-leather thrones provide heat, ventilation, and massage.

The driver-focused 2018 Buick Regal GS returns as more than just an appearance and chassis-tuning package. This time, the Sport quotient gets Gran'er by two cylinders and 60 hp relative to the base Regal's. That's 310 total for you numerologists. Standard all-wheel drive ensures that all those hooves dig in. Keen observers will note Buick has essentially shoved the LaCrosse's 3.6-liter AWD powertrain into the Regal GS.

It's tempting to view this as a classic muscle car play. But this Regal is just 3 inches shorter in wheelbase and a mere 44 pounds lighter than its full-size Epsilon-platform cousin. So does the Regal GS drive like a LaCrosse with a half-empty fuel tank?

Nope. True, the hardware is essentially the same, and with near identical weight-to-power ratio and equivalent gearing, they might photo-finish the drag race that will never happen. But this hardware set offers a lot of knobs that can be turned to distinguish the more stately and luxurious LaCrosse from the flatter-cornering, more buttoned-down Regal GS.

The Regal's all-wheel-drive system combats understeer (and torque steer) by sending way more torque aft, the Continuous Damping Control shocks tense up quicker to combat pitch and roll, and the steering assist is reduced by 25 percent relative to the default Touring mode. (Sport mode steering gets 15 percent less assist.) The intermediate Sport setting splits the difference between Tour and GS mode, but its transmission, suspension, steering, and AWD settings can be customized.

Those rotary-valve-type CDC shocks can assess conditions and alter damping rates 500 times per second. And although the standard Regal Sportback's ride quality was sort of the target for the GS' Tour mode, the 19-inch rolling stock give the GS its own unique feel.

During a romp through some delightful rolling, twisting byways north of Atlanta, the Regal GS demonstrated a quiet, composed competence. The car's nine-speed automatic selected the correct gear for each corner exit, downshifting instantly to land at the perfect spot on the V-6's broader torque curve.

Those four-piston Brembo front brakes bite down on their 13.6-inch discs smoothly and confidently. These bigger brakes are shared with the high-performance Opel Insignia OPC. The 19-inch wheels and 245/40 Continental ProContact TX tires deliver brand-appropriate ride compliance—even in GS mode—with minimal tire squeal. We never noticed the engine's cylinder-deactivation "V-4" mode, and the auto stop/start system did its thing unobtrusively.

It's interesting to note that despite these fuel-saving features and the fact that the Regal GS is lighter than the LaCrosse 3.6 with AWD, the GS earns a lower EPA rating: 19/27/22 mpg city/highway/combined versus the bigger Buick's 20/29/23. Styling upgrades include all the yoozh—flared-nostril front and diffuser-enhanced rear fascias, 10-spoke wheels, a rear spoiler, and GS badging.

Frank Markus

SPECS **Base Price** $39,990
Vehicle Layout Front-engine, AWD, 5-pass, 4-door hatchback
Engine 3.6L/310-hp/282-lb-ft DOHC 24-valve V-6
Transmission 9-speed automatic
Curb Weight 3,800 lb (mfr)
Wheelbase 111.4 in
L x W x H 192.9 x 73.3 x 57.3 in
0-60 MPH 5.9 sec (*MT* est)
EPA City/Hwy/Comb Fuel Econ 19/27/22 mpg
Energy Cons, City/Hwy 169/116 kW-hrs/100 miles (est)
CO2 Emissions, Comb 0.83 lb/mile (est) **On Sale in U.S.** Currently

HIGH-END GOODIES These circular air vents are among the additions promised at this year's CES.

Mercedes-Benz A-Class FIRST LOOK

The waiting is over. Mercedes-Benz will finally introduce the A-Class sedan to the U.S. market this year, and with the debut of the European A-Class hatchback, we have an idea what to expect.

The new A-Class features a radiator grille with a diamond pattern. The hood slopes down more than its predecessor's, and you'll also notice larger wheel arches that hint at the model's athletic aspirations. An optional two-section AirPanel grille with adjustable louvers improves aerodynamics. As many teaser images previewed, the new A-Class' front end bears a strong resemblance to the 2019 Mercedes-Benz CLS.

Although the A-Class is a compact car at the lower end of the price spectrum, Mercedes didn't shy away from upscale touches. As teased at CES, the A-Class gets goodies from higher-end models in the lineup, including a widescreen display over the dashboard and ambient lighting with the choice of 64 colors.

The display is available in three versions, and each consists of two separate displays rolled into one. Buyers can select two 7.0-inch displays, one 7.0-inch and one 10.25-inch display, or two 10.25-inch displays. The infotainment system features natural speech recognition technology, and the voice-control system is activated by saying, "Hey Mercedes." In addition to voice commands, drivers can control the car's settings via the new touch capability on the infotainment system, touchpad on the center console, or touch control buttons on the steering wheel. The model also offers a head-up display, improved cargo space, massaging seats, and seat climate control.

The A-Class features semi-autonomous driving technologies, as well, including an adaptive cruise control system with active steering assist. With active lane change assist (available in certain markets), drivers can simply hit the turn signal, and the system will help move the car to the indicated lane when safe (just like a Tesla). Other features include autonomous emergency braking, blind-spot assist, and evasive steering assist, which can help a driver avoid darting pedestrians.

Although we don't know which engines will come to the U.S., three will be available at launch for the A-Class globally. These include two four-cylinder gas engines–163 and 224 hp, respectively—and a 1.5-liter diesel with 116 hp. All of these come with a seven-speed dual-clutch transmission, but a six-speed manual is available on the 163-hp gas engine in some markets.

The new A-Class has a strut front suspension. Some models receive a torsion beam rear suspension, and upgraded versions have a four-link rear suspension. Dynamic Select allows drivers to adjust the car's suspension settings.

Globally, the A-Class went on sale in the spring, but timing of the U.S. debut hadn't been announced at press time.

Kelly Pleskot

Intake NEWCOMER

Photos: Robin Trajano

2018 Jaguar F-Type Coupe 2.0

A TOUCH OF LUXURY For 2018, Jaguar added several small touches of chrome finish to the interior.

Ian Callum's ability to design such beautiful cars with regularity must drive the other guys nuts. Just look at the F-Type. Proportion is spot on. The body's gesture needs no superfluous creases to create "surface excitement." Every line counts.

The entire 2018 F-Type lineup receives simpler but bolder front and rear fascia updates to better distinguish one model from another. All get full LED lighting, extensive interior tweaks including Jaguar's latest infotainment system, and new magnesium-framed "slimline" seats—which are shockingly comfortable and supportive.

The rating for Jaguar's new Ingenium 2.0-liter turbo-four stands at an impressive 296 horsepower and 295 lb-ft of torque. The Ingenium is all aluminum, uses direct injection, and boasts an innovative electrohydraulic valvetrain. Its exhaust manifold is integrated directly into the cylinder head. A twin-scroll turbocharger rides ceramic bearings and ensures that the maximum torque is delivered at just 1,500 rpm—although there is still some unavoidable turbo lag.

Sadly, the Ingenium lacks the barking, snarling engine note of its larger-displacement sibs. You get some aural feedback at wide-open throttle or some exhaust crackle on lift-throttle overrun, but several other turbo-fours (ahem, Alfa Romeo Giulia) sound better.

In Normal mode and with the transmission set in drive, the driveline feels uninspiring and frugal. It became habit to nudge the shifter into S-Drive and the rocker toward the checkered flag that engages Dynamic mode. This sharpens throttle and transmission response to better match expectations. The eight-speed automatic is rarely caught confused or lacking response, and it eagerly drops a couple gears at once when asked to. Because Jaguar's adaptive dampers are not available on this base model, monotube shocks have been calibrated to deliver a good balance of compliance, ride comfort, and athleticism. Even with our car's optional 19-inch wheels ($1,020) and 245/40R19 94Y front and 275/30R19 96Y Pirelli P Zero tires, the car retained its light-footed spryness, and the ride was hardly punishing.

This 207-pound-lighter four-cylinder version feels quicker to react and more obedient in the corners. The rear end, however, can still be edgy, but not in the way of the more powerful F-Types.

In the process of lapping our figure-eight course, I found the engine has just enough torque to step the rear out, but only slightly and controllably on exit. The biggest challenge is corner-entry oversteer. There's an edginess to it, and it will easily bite if you enter with too much speed then snap the quick steering. Its strong brakes never faded, but I wish there were more feel and less squish in the pedal.

Regardless of powertrain, the F-Type looks and feels special. Jaguar added satin-chrome finishes to the starter button and gearshift paddles and bright-chrome finish to the air vents, steering wheel, and doors' switchgear.

Should Jaguar have diluted this car with a four-cylinder version? The F-Type turbo-four is undeniably gorgeous, well-equipped, and clever—even fuel-efficient. But it's expensive at its $60,895 base sticker and outrageous at $68,913 as tested. That's a steep price to pay to feel special. **Chris Walton**

SPECS
Base Price $60,895
Price as Tested $68,913
Vehicle Layout Front-engine, RWD, 2-pass, 2-door hatchback
Engine 2.0L/296-hp/295-lb-ft turbo DOHC 16-valve I-4
Transmission 8-speed automatic
Curb Weight (F/R Dist) 3,601 lb (53/47%) **Wheelbase** 103.2 in
L x W x H 176.5 x 75.7 x 51.6 in
0-60 MPH 5.4 sec
Quarter Mile 14.1 sec @ 99.7 mph
Braking, 60-0 MPH 112 ft
Lateral Acceleration 0.95 g (avg)
***MT* Figure Eight** 25.4 sec @ 0.73 g (avg)
Real MPG, City/Hwy/Comb 21.0/32.3/25.0 mpg
EPA City/Hwy/Comb Fuel Econ 23/30/26 mpg
Energy Cons, City/Hwy 147/112 kW-hrs/100 miles
CO2 Emissions, Comb 0.75 lb/mile

MIKE CONNOR

TRD Pro Toyota reveals new off-road goodies

For 2019, the engineers at Toyota Racing Development have worked their magic on the Tundra full-size pickup (after a year's hiatus), as well as new variations of the Tacoma midsize pickup and 4Runner SUV, all available this fall.

All three get Fox 2.5-inch rear aluminum-bodied internal bypass shocks to improve damping for everything from rock crawling to high-speed desert running and to provide better on-road performance.

Off-road race vehicles traditionally have external bypass tubes, but Toyota went for a Fox shock with bypass zones inside the shock for a more cushioned ride. For better bottoming resistance, the shock becomes stiffer at the extremes of its stroke. The front shocks are paired with specially tuned TRD springs for ride comfort and additional lift for the trail, and dust boots keep contamination out of the front and rear shocks.

The Tundra has rear leaf springs, the 4Runner uses the TRD off-road-grade rear coil springs, and the Tacoma has progressive-rate off-road leaf springs. **Alisa Priddle**

Tundra TRD Pro

In addition to the Fox shocks, the Tundra's suspension gets an extra 2.0 inches of lift, and wheel travel is increased by more than 1.5 inches in front and more than 2.0 inches in the rear. The full-size pickup gets the new Rigid Industries LED foglights, as well as LED headlights with more menacing black accents, a new grille and hood scoop, and an available moonroof. The truck has a dual exhaust with black chrome exhaust tips.

In the back, "TRD Pro" is stamped in the rear quarter panels, and the truck gets new 18-inch BBS five-spoke forged aluminum wheels in satin black with Michelin P275/65R18 all-terrain tires. Under the front end is a 0.25-inch skidplate.

4Runner TRD Pro

For 2019, the 4Runner ups its game with the Fox shocks and tuned front springs for an extra inch of lift and wheel travel. Here again the shocks get dust boots. A TRD roost shield protects the inverted rear shocks, and a skidplate under the front protects the powertrain. The off-road SUV gets a new roof rack for gear, a blacked out grille, LED foglights, and 17-inch matte black TRD alloy wheels offset for a wider track. The tires are Nitto Terra Grappler P265/70R17 A/Ts.

Tacoma TRD Pro

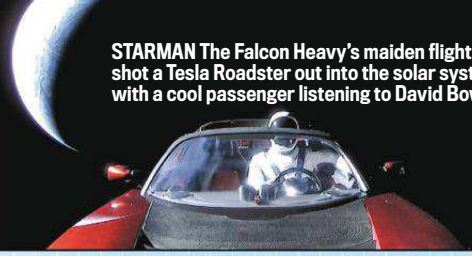
The Tacoma TRD Pro is based on the TRD Off-Road grade and adds front Fox shocks with 1.8-inch pistons, TRD-tuned springs with an extra inch of front lift, and a larger front anti-roll bar. It has the 2.5-inch rear shocks, an updated front skidplate, and a new black chrome tip on the exhaust.

Among the upgrades is an available all-new TRD Desert Air Intake snorkel, which moves the 278-horsepower 3.5-liter V-6 engine's air intake away from the wheelwell–where dust typically gathers when off-roading. The air comes in from a cleaner space above the windshield.

MT CONFIDENTIAL

Ferrari has admitted to carefully optimizing cars to ensure they perform at their absolute best in media tests. That's not cheating, they say, just ... optimizing. And if one senior development engineer at a rival automaker is right, Ferrari is very good at it. He says the Ferrari 488 GTB his company bought retail to use as a benchmark vehicle feels nowhere near as good in terms of engine performance and chassis composure as the press cars he's driven. So much so that he's seriously considering dropping the Ferrari from the competitive set. **Worried by declining sales in the segment**, Porsche is reportedly considering a bunch of options for the next-gen 718–and none of them include an all-new, all-Porsche car powered by a mid-engine internal combustion engine. The most conservative option involves a simple reskin of the existing vehicle; the most radical, using a shortened version of the forthcoming Mission E platform to create an all-electric sports car. In the middle? An all-new sports car that could be shared with Audi to spread development costs and boost sales volume. Whispers around Weissach even include a doomsday scenario: axing the 718 lineup altogether. **Meanwhile, across town at Daimler**, the decision has already been made: There will be no replacement for the SLK roadster. Original plans called for the next-gen SLK to have been developed in concert with the next-gen SL, both cars sharing an all-new aluminum intensive architecture. But now the next-gen SL will share its underpinnings with the next-gen AMG GT lineup, with all the basic vehicle development for both handled by AMG. The move makes a ton of sense. The required investment in platform attributes and technologies for the two cars is similar, and the GT can generate higher profits for a quicker payback than the cheaper SLK. What's more, the 911-fighter focus of the GT range means the next-gen SL can be made a little larger to deliver proper 2+2 seating, and it can be given a slightly more relaxed ride and handling balance. **Crisis? What crisis?** Demand for mega-dollar hypercars shows no sign of slowing. Aston Martin insiders report the company could have sold the 175-car production run of the radical Adrian Newey–designed Valkyrie seven times over despite the $2.7 million price tag.

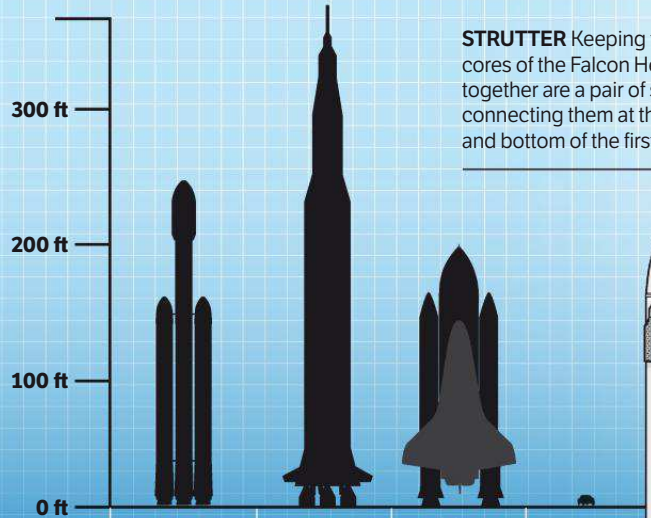
Intake



STARMAN The Falcon Heavy's maiden flight shot a Tesla Roadster out into the solar system with a cool passenger listening to David Bowie.

Elon Musk's Thunderbird is Go

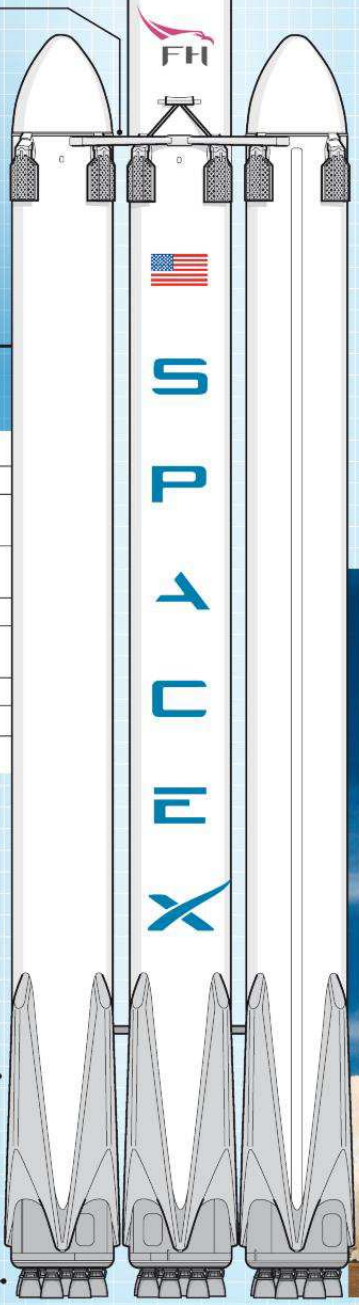
In early February, SpaceX launched its first Falcon Heavy rocket into orbit, carrying SpaceX and Tesla CEO Elon Musk's personal Roadster as a test payload, and then successfully landed two of the three rocket boosters. It was an incredible achievement, and it got us thinking about what it would take for our Truck of the Year to do the same. So we did the math.



	2018 FALCON HEAVY	1973 SATURN V	2011 SPACE SHUTTLE	2018 F-150†
HEIGHT	229.6 ft	363.0 ft	184.2 ft	6.4 ft
WEIGHT	3,125,735 lb	6,540,000 lb	4,500,000 lb	5,265 lb
THRUST, FIRST STAGE	5,130,000 lb comb	7,823,000 lb comb	6,800,000 lb comb	Say what?
TOP SPEED (1ST STAGE)	5,902 mph; 2,638 m/s	5,330 mph; 2,383 m/s	3,634 mph; 1,625 m/s	approx 100 mph
0-60 MPH	6.7 sec	10.5 sec	5.0 sec	7.0 sec
1/4-MILE	15.5 sec @ 131.7 mph	17.9 sec @ 107.4 mph	12.0 sec @ 168.0 mph	15.5 sec @ 89.5 mpg
0-600 MPH	47.5 sec	60.0 sec	35.0 sec	Um, no.
PAYLOAD-LEO*	140,660 lb	310,000 lb	60,600 lb	1,690 lb
PAYLOAD-GSO*	58,860 lb	107,100 lb	8,390 lb	Again, no.

STRUTTER Keeping the three cores of the Falcon Heavy together are a pair of struts connecting them at the top and bottom of the first stages.

THE FALCON HEAVY It's basically three first stages of a Falcon 9 combined with a second stage mounted to the center core.



PAYLOAD

HEAVY HAULER The Falcon Heavy can lug roughly 140,660 pounds of payload to low Earth orbit (LEO), roughly three times the payload of a Falcon 9. Let's compare that to one of our earthbound heavy haulers, the Truck of the Year–winning Ford F-150†.

26
Number of F-150s a Falcon Heavy can place into low Earth orbit (by weight)

COST

$ = $10 million

FALCON HEAVY
$$$
$$$
$$$
$90 million*

DELTA IV HEAVY
$$$$$
$$$$$$
$$$$$$
$$$$$$
$$$$$$
$$$$$$
$350 million

*if recovering three cores

REUSE AND SAVE The Falcon Heavy's direct competitor, the United Launch Alliance's Delta IV Heavy, has a cost of $350 million per launch compared to a $90 million price tag for a fully reusable Falcon Heavy.

LIFTOFF

From Launch Complex 39 at the Kennedy Space Center in Florida, The Falcon Heavy became the most powerful rocket in operation today.

HOT FEET The landing gear folds out just before the first stage touches down on either the drone landing ship or the landing zone.

BIRDS OF A FEATHER The 27 (9 x 3) Merlin engines are not named for the mythical Arthurian sorcerer. It refers to a small species of ... falcon.

* Low Earth orbit; Geosynchronous orbit

Words and Research Scott Evans **Illustration** Paul Laguette

† F-150 numbers based on a 2018 4X4 Supercrew Lariat with a 2.7-liter EcoBoost engine.

Images: SpaceX

SUPERCAR HQ

When we set out to reinvent the NSX, our goal was to create not only the best supercar in the world, but also the best supercar factory in the world. That would mean reimagining how cars are made altogether—building a place where Acura's top engineers and technicians could experiment, design, and craft new technologies aimed at achieving an entirely new level of precision.

A place where workers develop their own processes, leading to over a dozen patents. A place where auto industry firsts are the norm, like our space-frame weld technique, in which the entire chassis is rotated so technician-trained robots can perform their nine hundred-plus surgically precise welds at the optimal angle. A place where every bolt is started by hand. A place with no repair area, as a car built from perfect parts and rigorously checked at every stage of the build should be perfect when it rolls off the line. A place where unequaled innovation and master craftsmanship collide. And all under a single roof in Marysville, Ohio. We call it PMC—the Performance Manufacturing Center.

This is the Acura NSX. And this is where we make it.

Check out the NSX at your local Acura dealer, or build your own at nsx.acura.com/build.

The Acura NSX is manufactured using domestic and globally sourced parts. ©2018 Acura. Acura, NSX, and the stylized "A" logo are registered trademarks of Honda Motor Co., Ltd.

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We Say...

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Jobs Jobs Jobs But where are the workers?

"Build it where you sell it" used to be the motivation for foreign automakers to bring plants to America—as well as to avoid transport costs, to achieve quicker-to-market timing, and as a hedge against currency-exchange fluctuations.

But today, it's simply cheaper to build cars here than it is in South Korea or Germany or Sweden.

Automakers might have taken a breather during the devastating recession of 2008–2010, laying off hundreds of thousands of auto workers as vehicle sales plummeted and the need for second and third production shifts waned. But auto factory employment is now at a higher level than before the last sales peak—just before the economy collapsed in 2008, according to the Bureau of Labor Statistics (see chart below).

It's good news for American workers that there is a new Toyota-Mazda plant in Alabama, a new Volvo plant in South Carolina, and an expansion of Daimler's operations in Alabama. In fact, in some auto sectors there are more jobs open than there are qualified workers to fill them. Why? Put simply: poor skills and low wages.

Auto manufacturing expert Mike Robinet, managing director for data giant IHS Markit, says some automakers have had to delay production or miss a third shift because they (or their suppliers) couldn't find enough trained or trainable people and thus suffered shortages of labor or critical parts. He cites Denso's new $1 billion plant in Maryville, Tennessee, which will build battery inverters and power supplies, as having to "import" people from outside the Knoxville area to fill the 1,000 jobs that will staff the plant.

A Denso spokesperson responded that the company "is not 'importing' workers," merely "adding new strategies to reach a larger radius or market than in the past."

Tomayto. Tomahto.

As early as 2014, there were signs that America might lack the skilled and semi-skilled laborers needed to fill its available auto jobs. That year, I attended a gathering of the Japan-America Society

New plants are good news for U.S. workers. In fact, in some sectors there are more jobs than qualified workers to fill them.

of Indiana, where executives from three major automotive suppliers—Aisin Seiki, NTN Driveshaft, and Enkei America—said they couldn't fill key positions at their southern Indiana operations because there weren't enough qualified applicants.

Well, sort of.

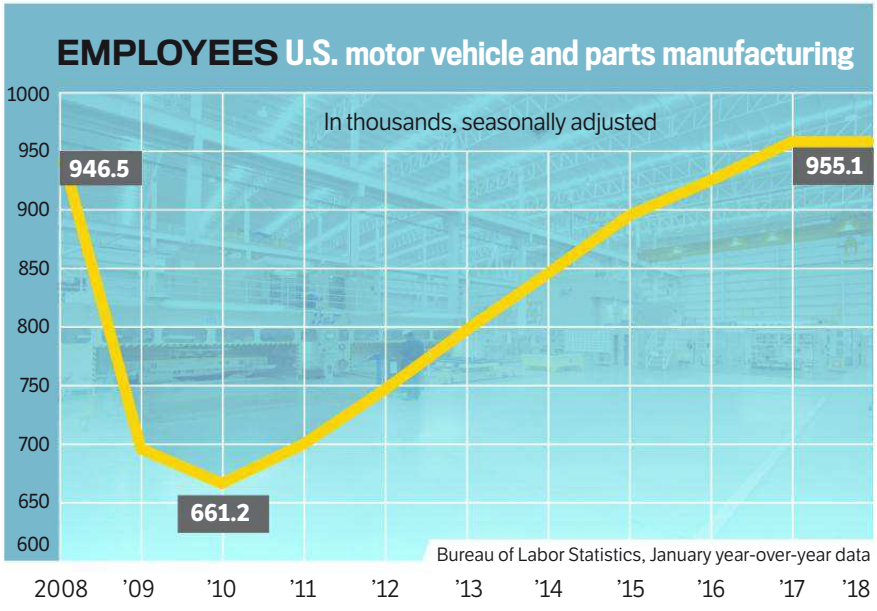
It used to be that, back in the golden age of manufacturing, skilled workers on the assembly line received a respectable blue-collar wage, owned a home, and sent their kids to college. But recent recession-driven labor contracts (or lack of labor influence altogether) have allowed automakers to drive wages down—especially for newcomers to the factory.

The average hourly wage for an autoworker in America was $22.09 in 2008, a number that has inched to $22.39 over the past decade, according to the Bureau of Labor Statistics. But if wages had merely kept pace with inflation, they should average $25.94 an hour today.

Remember, this is an average. Lots of grandfathered workers with seniority make well more than this amount. But many of the new auto jobs being created are actually in the $9 to $15 per hour range, according to a recent piece of investigative reporting by *Bloomberg Businessweek*. That's not much incentive for a skilled job seeker seeking to support a family. And lowering the bar for new employees willing to accept those wages means the industry has to deal with less qualified candidates, higher absenteeism, and failed drug tests, Robinet says.

Of course, certain economic supply-and-demand theories contend that with 4 percent unemployment and jobs going begging, automakers and suppliers might have to sweeten the pot a little to bring in new hires.

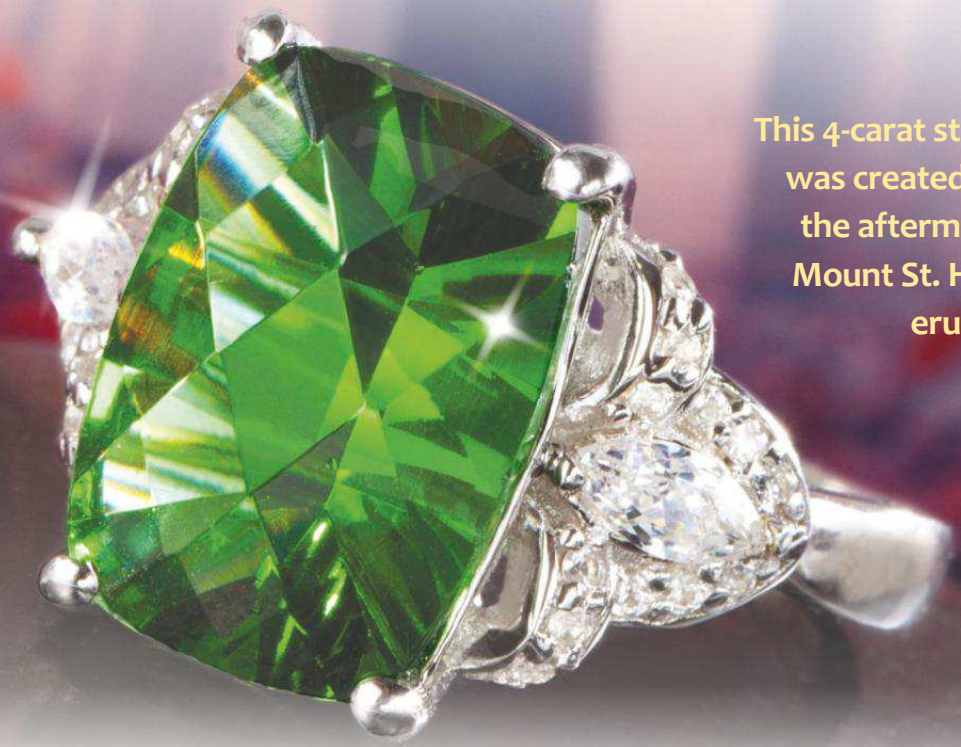
What's good for GM (and Ford and Toyota) is good for America. But more to the point, what is good for American workers is good for America, too. They should be treated accordingly, both by training and by what they earn. It's great that auto jobs are back. Now wages need to follow suit. ■



What our clients are saying about Stauer Helenite jewelry:

"My wife received more compliments on this stone on the first day she wore it than any other piece of jewelry I've ever given her."

– J. from Orlando, FL
Stauer Client



This 4-carat stunner was created from the aftermath of Mount St. Helens eruption!

Famous Volcano Has Strange Effect On Women

Man and nature collaborate to create a glamorous green ring guaranteed to rock her world! Own it today for ONLY $99 plus FREE studs with ring purchase!

On May 18, 1980, Mount St. Helens erupted, sending a column of ash and smoke 80,000 feet into the atmosphere. From that chaos, something beautiful emerged—our spectacular **Spirit Lake Helenite Ring**.

Created from the superheated volcanic rock dust of the historic Mount St. Helens eruption, helenite has become the green stone of choice for jewelry and fashion designers worldwide. Helenite's vivid color and immaculate clarity rivals mined emeralds that can sell for as much as $3,000 per carat. Today you can wear this 4-carat stunner for **only $99!**

EXCLUSIVE FREE Helenite Studs
-a $129 value-
with purchase of Spirit Lake Ring

Our exclusive design highlights the visually stunning stone with a concave cut set in .925 sterling silver loaded with brilliant white, lab-created Diamond*Aura*®. The classic pairing of colors in a vintage-inspired setting makes for a statement ring that's simply impossible to ignore!

Beauty from the beast. Also known as "America's Emerald," helenite is not an emerald at all, but a brighter and clearer green stone that gem cutters can facet into spectacular large carat weight jewelry. "It's just recently that luxury jewelers have fallen in love with helenite," says James Fent, GIA Graduate Gemologist. "Clear green color in a stone this size is rarely found in emeralds but helenite has come to the rescue."

Your satisfaction is 100% guaranteed. Bring home the **Spirit Lake Helenite Ring** and see for yourself. If you are not completely blown away by the exceptional beauty of this rare American stone, simply return the ring within 30 days for a full refund of your purchase price. It's that simple. But we're betting that once you slide this gorgeous green beauty on your finger, it will take a force of nature to get you two apart!

Spirit Lake Helenite Ring
Total value with FREE studs ~~$478~~*
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We Say...

Frank Markus
TECHNOLOGUE

Motoring Cortex Nissan researches mind-over-motor technology

Nissan made big, brainy waves at CES by unveiling its brain-to-vehicle research project. If you've read recent headlines about people controlling robotic arms or quadcopters simply by thinking about doing so while wearing funny electroencephalography (EEG) caps bristling with sensors and wires, you might wonder whether the era of drive-by-wireless imagination is upon us. It is not. Nor is direct brain control of your commute what Nissan is after. This sandbox research project simply aims to use brainwaves to make your time in a car more pleasurable in two specific instances—when you're driving and when you're being driven.

The simple truth of brain control of anything via EEG is that, for now at least, detecting sufficient brain activity to control roboarms, copters, or cars typically requires the user to wear something like a swimming cap containing loads of sensors that must be precisely positioned on the scalp using electrically conductive gel that's guaranteed to ruin any coiffure. But according to Nissan's Lucian Gheorghe, senior innovation researcher in charge of the B2V project, some signals are easier to detect reliably with less complicated sensors. His new headset features 11 pads with four contacts each, and they don't require gel. It's more comfortable to wear, delivers 95 percent of the accuracy of a gelled-up medical-grade sensor cap, and connects to the vehicle conveniently via Bluetooth.

The first of these signals is known as motor-related cortical potential (MRCP), and it fires from the motor cortex about 500 milliseconds before the driver's arm muscles execute a turn. Gheorghe proposes using that advance warning to order the electric steering assist to initiate a turn. Doing so will get that first part of any turn out of the way, where all the bushing compliance and rubber bending occurs and nothing seems to happen. Get it right, and the driver perceives the steering to be super responsive (dare we say telepathic), making the car feel agile. Timing is crucial—jump the gun too much, and expert drivers will sense autonomy. Another challenge is predicting the direction—the easily detected MRCP signal doesn't specify left or right. Onboard sensors and map data can predict the direction with greater accuracy than direct brain-signal interpretation could provide.

The second signal, known as an error-related potential (ERP), fires off from the anterior cingulate cortex when our brain notices a mistake or unexpected event. Researchers at MIT and Boston University have used this signal as a means for humans to fine-tune sorting decisions made by robots. Similarly, Gheorghe believes it can be used to fine-tune the driving behavior of your autonomous car. Here's the setup: Your car has learned that on your drive home from work, you wish to be more relaxed—following slower-moving cars in a leisurely fashion rather than aggressively overtaking them. But one day, you need to get home quickly. Displeasure with the gentler driving gets registered by these ERP signals, and the car switches to an in-a-hurry driving protocol.

This is all years away, and by the time its ready, the sensing might not require a headset. Instead we could be using sensors embedded in the driver. Wireless, batteryless, implantable sensors known as "neural dust" are the latest rage in "electroceuticals" used for monitoring and even stimulating various nerves or muscles. Acceptance of implanted electronics today varies widely by region. Americans and Japanese are very "anti." But Dutch and Spanish nightclubs have allowed special VIP access and account payment via embedded RFID chips—similar to the one in your pet if you registered it.

Oh sure, today it's easy to say, "Club access and crisp steering would never get me to submit to an electronic implant." Expect Big Government and Big Business to up the ante in the future with alluring prospects such as jumping bothersome lines at airport security, national borders, amusement parks, etc. By the time the deal gets sweet enough to entice you, Nissan should be ready to tap your embedded sensors and rock your ride. ■

SIMULATOR, STIMULATOR
This fellow is sending electroencephalographic signals via his comfy, gelless Bluetooth headset. Those signals show up as a sine wave on a screen and order steering to commence.

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They Say...

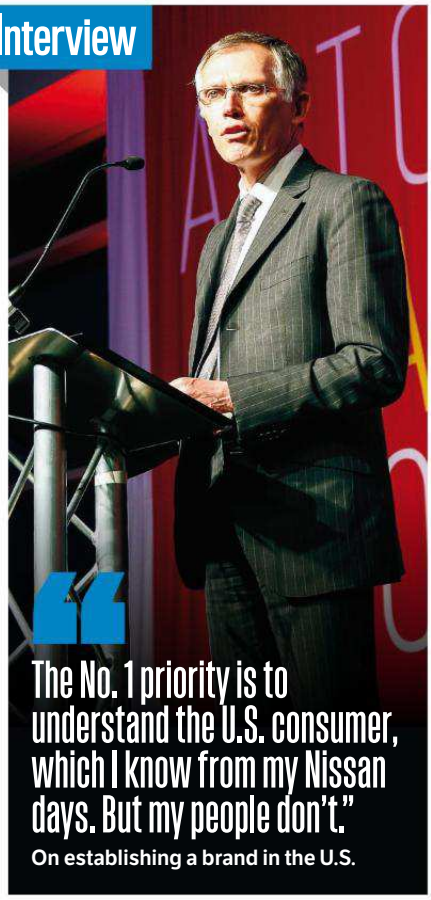
Carlos Tavares

CEO AND CHAIRMAN, GROUPE PSA

Carlos Tavares is good at shaking up the auto world. He left the No. 2 spot at Nissan Renault to become CEO of Groupe PSA in 2014, taking the Peugeot, Citroën, and nascent DS brands from near death to a 7.3 percent profit margin with no debt. Then he bought the ailing Opel and Vauxhall brands from GM with plans to make them profitable in four years. He expects the larger PSA to grab 17 percent market share in Europe. Once that's accomplished, Tavares plans an expansion into the U.S.

What can you do with Opel that General Motors could not? Everything I see at Opel is exactly the same thing as what we had at PSA four years ago. When you look at the numbers, it's striking. The manufacturing costs of the U.K. plants is double the manufacturing costs of the French plants. We gave our Opel teams the benchmarks, line by line, function by function. They say, "OK, if the French guys did that, we can do it." We also moved the decision center not from Detroit to Paris but from Detroit to [Opel's base in] Rüsselsheim, [Germany]. We are giving these people breathing room to control their destiny by coming up with ideas to improve the profitability of their company themselves.

At what point can GM no longer use Opel platforms and manufacturing? It will need a few years because there are stringent CO2 objectives in Europe in 2020 we have to meet, and we have a strong technology and product plan for Opel that we are now implementing. It's going to happen with the end of each generation of products. It will be staged over three or four years.



"The No. 1 priority is to understand the U.S. consumer, which I know from my Nissan days. But my people don't."

On establishing a brand in the U.S.

How do you establish a brand in the U.S? The No. 1 priority is to understand the U.S. consumer, which I know from my Nissan days. But my people don't. We need to get them up to speed to understand what is going on and how people react here. That's the goal of the first two phases with the mobility service approach (a car-sharing service using competitive cars first, followed by PSA models) to get more feedback on features and performance, on what they like and dislike. The third leg is deciding what technology, products, brand, and most efficient distribution model to bring to the country at that point in time. That's an important driver because this is a 10-year plan.

NOT THAT AUTONOMOUS This DS 7 Crossback with French Prime Minister Emmanuel Macron popping out of the sunroof has Level 2 autonomy, so someone is still in the driver's seat.

What U.S. cities will be first to offer cars using the Free2Move car-sharing global app for phase one? There are several projects under preparation, but there should be a big East Coast city very soon. We'll announce it in a few months.

When will you start selling your own products in the U.S.? Will it be a luxury or mass-market brand? It's not decided yet.

What do your brands offer the U.S. that isn't already here? We have a high level of market share in many other markets in the world and the competitors are mostly the same, so why couldn't we make U.S. consumers happy? Our engineering teams are using Rüsselsheim engineers to make our next generation of products U.S.-compliant. That work started a few months ago (fall 2017) and is being boosted by using engineers who have been working for GM for so many years.

You plan to electrify the whole lineup in 2025. Other automakers have targeted 2019, 2020, and 2021. Why so late? We start in 2019, and from there it ramps up. I think it's 50 percent by 2020 or 2021, and then it ramps up to 100 percent. It combines pure EVs and [plug-in hybrid EVs]. The platform is engineered to use the same assembly line to make petrol-powered, diesel-powered, EV-powered, and PHEV-powered cars.

How can you afford these technologies given your scale? Our R&D and capital expenses are around 8 percent. We are investing heavily in electrification and autonomous vehicles. We are launching the new DS 7 Crossback, which is the first car of a second generation of our premium DS brand with Level 2 Automated Driving systems, and we are also investing heavily in connectivity and mobility services.

What is your ramp up to autonomous vehicles? Level 1 was on sale with the Peugeot 3008 last year. Level 2 is the DS 7 Crossback. Level 3 will be around 2020, 2021. And Level 4 around 2022, 2023. ■

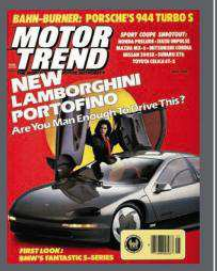
REARVIEW

From the *Motor Trend* Archive ...

50

MAY 1968
PRICE: $0.50

If you wanted to win a Pontiac GTO or $2,000 in cash prizes (about $14,330 with inflation) back in May 1968, then you'd better have read our special accessories section. You also could check out our test where we pitted mainstream cars such as the Chevrolet Caprice and Ford LTD against luxury counterparts such as the Cadillac Coupe de Ville and Lincoln Continental so we could determine if luxury was worth it. Not a bad idea for a comparison test ...



30

MAY 1988
PRICE: $2.50

Yikes. Given our current cultural climate, this cover featuring the Lamborghini Portofino concept with a model in a tie, hasn't aged all that gracefully. That Lamborghini Portofino never went into production, but you'll note Ferrari liked the name enough to use it for its own car (see page 62).

10

MAY 2008
PRICE: $4.99

"Coupe De Thrill," we decreed above the sharp-looking Cadillac CTS Coupe, which blew us away when it launched. It's kind of a shame Cadillac discontinued the CTS coupe and wagon for the latest generation, especially considering how handsome those designs were.

Do you hate your detector?

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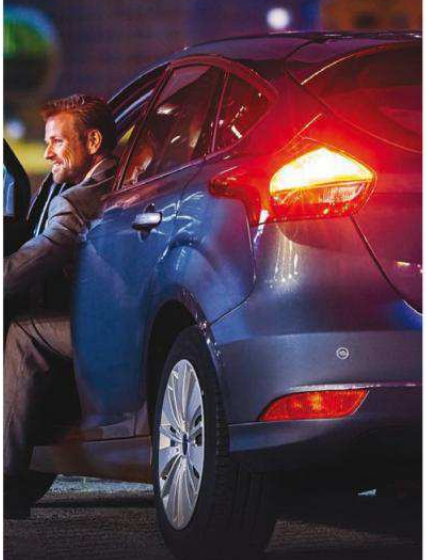

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Your Say...

READERS' THOUGHTS ON PAST ISSUES

Driverless Future

I just read Mark Rechtin's column in the March 2018 issue ("Why the autonomous-car society is still decades away"). Under the "Ethics" paragraph, I have a possible solution to the autonomous car theoretical situation: "to run over children mingling around their stalled bus in the middle of a blind corner, or to drive off the adjacent cliff." I think if you can build an autonomous car, you can surely have it slow down and safely stop within the forward distance it can see ahead. I do this on my own all the time.

CHARLIE BOHNERT
FENTON, MISSOURI

Mark was being a bit hyperbolic, but you seem to agree that one of the challenges in engineering an autonomous car is predicting the unpredictable, just like human drivers do every day.—Ed.

I'm going to talk to a friend about welding Nerf bars on the front of my car in the event I ever see a "self-driving car" on the road. I want to take a page out of Dale Earnhardt's book to see if I can rattle the computer's cage.

BRIAN MURPHY
WALNUT CREEK, CALIFORNIA

Your insurance provider must love you.—Ed.

Sticky Rubber

I read your article on performance tires on your Chevrolet Bolt EV ("Blasphemy or brilliance?" MotorTrend.com), and I wanted to share a few thoughts and observations about the choice of tire I went with on my Bolt as opposed to the BFGoodrich g-Force Sport Comp-2 tires used in your test. I haven't noticed a significant amount of tire noise; the Michelin Super Sports I chose seem to have a more closed tread design with larger blocks. Because I never drive anywhere near the claimed 238-mile range, I don't know precisely how the range might be affected. I have taken several 150-mile drives, and from the instrument panel, I noted I was at 10 percent mileage more than the "middle" remaining range value.

Finally, I agree with the cons you've noted on the Bolt. Coming from a 2014 BMW i3, the Bolt interior fitment is a letdown; dash materials and especially the seats are cheap and unappealing. GM could have done a much better job with seat comfort. The infotainment screen blanks occasionally, and even weirder, I get the occasional rearview camera view while I'm driving forward.

That said, it's still fun zipping around town, and the SoCal Edison rate reductions for a BEV are almost too good to pass up, but in two years, I think I'll be glad to return this lease and look elsewhere.

JIM DIXON
IRVINE, CALIFORNIA

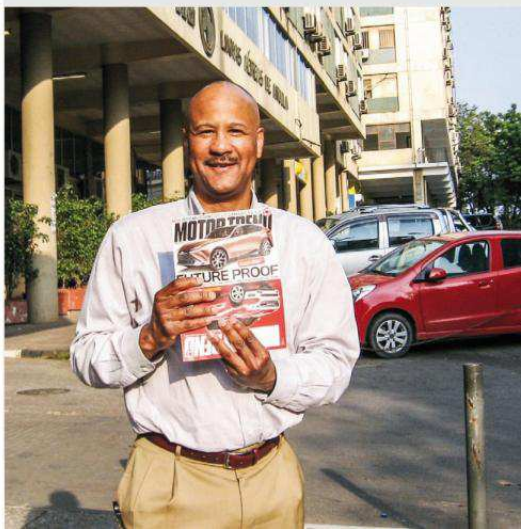
Thanks for taking the time to share the results of your own experiment, Jim! Electric vehicles are in a weird place right now, with mainstream cars like the Chevrolet Bolt and Nissan Leaf competing against luxury EVs from BMW and Tesla. With more automakers committing to the technology, we bet you'll have some tough choices to make when your Bolt lease is up.—Ed.

Hot Jeeps

My wife and I have a 2015 Renegade Latitude with the 1.4-liter turbo, all-wheel drive, and a manual transmission. It is a blast to drive. We have over 75,000

READERS ON LOCATION

DARRELL FARLOUGH, a subscriber for the past 35 years, is on the road. He's taken a copy of *Motor Trend* with him to all 50 states and to 24 countries. On the same day he took this picture with our March issue in the Angolan capital of Luanda, Darrel says he saw a Chevrolet Camaro, Dodge Challenger R/T, and a Ford Mustang GT, proving that pony cars truly have a global appeal. Hope you enjoy your travels, Darrell!



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HIGH PRAISE OF THE MONTH:
"God himself designed it."

miles on it; we drive past Fiat-Chrysler's Arizona proving ground daily. The only issue we've had is with the car losing power when it gets hot. Sometimes it simply loses power, while other times it shudders violently.

We've enjoyed you articles ("Garage") and look forward to the next one.

ALAN HOULIHAN
VIA EMAIL

We had similar experiences when we tested a 1.4L-equipped Jeep Renegade like yours during our 2016 SUV of the Year testing in the California desert; the manual Renegade is fun to chuck around a corner or two, but the smaller engine doesn't have the guts to adequately power the Jeep and keep its passengers cool at the same time. We haven't had that problem with our 2.4L-equipped long-termer, but we have come across a few minor issues (pg. 97).—Ed.

Thirsty?

Just finished reading about the supersized Subaru Ascent with 19 cupholders ("Biggest Subie Ever," February). Really? Unless you are going to be trapped in some desert somewhere far, far away, why would you possibly need or want that amount of anything?

RONALD MUSIAL
VIA EMAIL

The Ascent seats seven, so that works out to 2.7 cupholders each—so basically just enough for each person to have a bottle of water and a coffee, with some room left over for phones. Cupholders ain't just for cups, you know.—Ed.

Millennial things

In your First Drive of the 2019 Volvo XC40 ("Wild Child," March), a vehicle I would consider for my two kids as they will be driving shortly, you touched on many interesting points but left out what anyone who considers a smaller CUV needs to know: How is the space inside? The real irony is that you do an inset feature on Volvo's online order for this vehicle with the buyer never setting foot in the dealership. It sure would be funny when a 6-foot 2-inch buyer orders one up and finds out there is not enough clearance for their head!

JIM MASTRODOMENICO
GLEN HEAD, NEW YORK

The #struggleisreal millennials on staff all appreciate the gesture on behalf of your children. Now, as for the XC40—Volvo's new CMA architecture allows for some exceptional interior packaging. The front seats are comfortable and give a commanding view of the road; in back, 6-foot-tall millennials, or more likely their dogs, will find plenty of leg- and headroom, though that sporty kink in the rear window line does eat into the outward view a bit.—Ed.

Only one question about the Lexus LF-1 concept car: Is that color Rose Gold or Millennial Pink?

D. SCHOTT
VIA EMAIL

Why can't it be both?—Ed.

Europe in the house

I belatedly picked up a copy of your Of The Year issue in the Vienna, Austria, airport in early February. Well done for an issue packed with loads of information and sound opinion. Reading about those models that rarely make it across the pond is also very enlightening for an English autophile. Having this issue in hand made me dig out my old copies of *Motor Trend* from my youth when, seen from the United Kingdom, the world of the American auto and its home environment was something special—the American Dream.

I have about 50 copies, with the earliest from December 1960: "1961 Thunderbird—Special Report!" I also have a copy of the December 1965 Car of the Year issue, when the trophy went to Oldsmobile's groundbreaking front-wheel-drive Toronado, the February 1966 issue, which asked if the engine of the future would be reciprocating, gas turbine, or Wankel! And I have copies of the 25th anniversary issue from January 1975, and the September 1999 50th Anniversary Collectors' Edition with "Free 1949 Premiere Issue." I'd long forgotten I had that very first issue!

So, a chance meeting at an airport in the heart of Europe, and I've been transported way back in time.

Thank you, *Motor Trend*.

RODGER BENDING
RINGWOOD, ENGLAND,
UNITED KINGDOM

Wow! We're honored you've held on to all of those past issues! Thanks for being such a dedicated reader and waving the MT *flag across the pond.—Ed.*

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 Words Scott Evans, Alisa Priddle, and Christian Seabaugh **Photographs** William Walker

WAGON TRAIN

It was oddly appropriate that our migratory party of eight would suffer a wagon calamity on the California Trail. It's a fate that befell many of the Gold Rush pioneers and other westward travelers whose tracks we'd been following.

Our quartet of modern, reliable transportation was slated to journey in five days what took our 19th century ancestors five months. Those early pioneers dealth with 50-inch wooden wheels, broken trails, and death by dehydration. We had winter tires, paved roads, and Egyptian cotton bedsheets. Still, we should have known better. Ghosts haunted our path.

By the side of a pitch-black, windswept two-lane Wyoming highway, our plan became as mangled as our Buick. The story we'd begun the day before was over. Right there and then, we knew this couldn't be your typical road trip story or comparison test—we can't fully review what we can't drive.

Instead, we'll recount the journey the way our forebears would have when they finally reached the Golden State—a tale told by those who survived it, gathered around a campfire and reliving their adventures. After all, the pages of *Motor Trend* make excellent kindling.

DAY 1: Independence, Missouri

Alisa: The Priddle clan landed first and took possession of two wagons, the 2018 Subaru Outback 3.6R and the 2018 Volkswagen Golf Alltrack TSI 4Motion—just as the Evans, Seabaugh, and Walker families touched down. Soon, they had the new 2018 Regal TourX and our Volvo V60 Cross Country support wagon in hand.

Scott: It was too bad we couldn't include the Volvo in the comparison like we had planned, but with the all-new model announced literally as we were getting on the plane, it just wasn't fair to pit the Volvo's previous generation against three brand-new models.

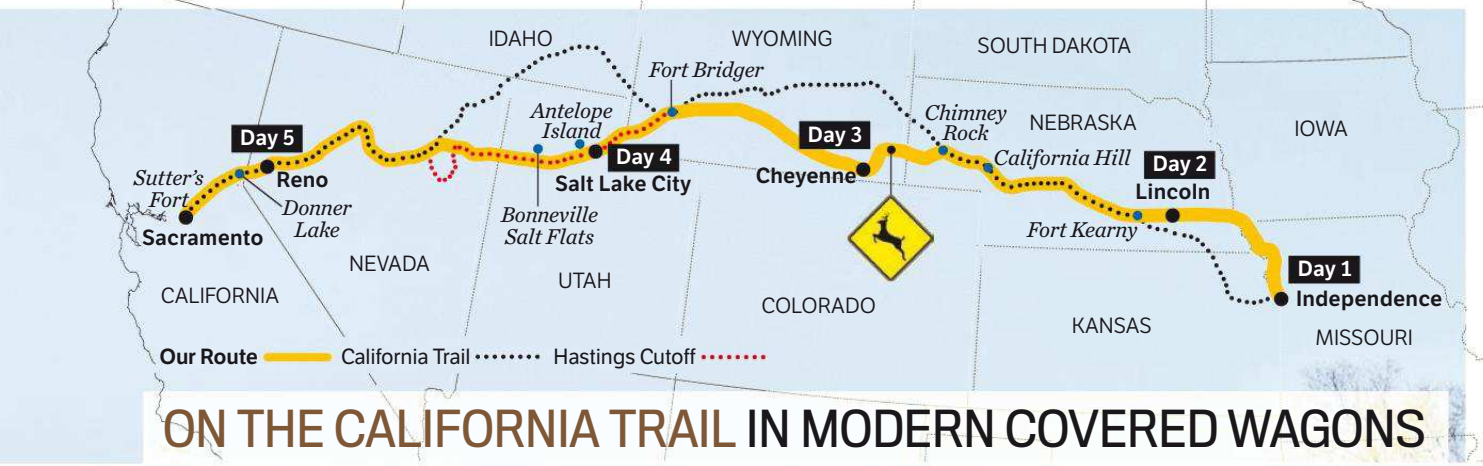
Christian: May as well have had a prairie wagon and oxen in the comparison.

Alisa: Wagon trains were full of women and children, so it only made sense that we traveled as families, too.

Scott: I think our spouses had different ideas of what this was going to be. Kathryn kept asking what we were actually going to do each day. It was strangely hard to explain we'd just drive until we either got hungry, hit a waypoint, or came across something the photographers liked.

Alisa: Steve expected long days and lots of waiting around but that each stop would be an opportunity to soak in the surroundings.

Christian: Yeah, Elayna expected both but also thought we could handle driving



ON THE CALIFORNIA TRAIL IN MODERN COVERED WAGONS

CHANGING TIMES The road might be paved today, but the sights along I-80, which roughly mirrors the California Trail route, haven't changed much over 175 years.

2018 Buick Regal TourX (Essence)

TIME FLIES It typically took the pioneers six to eight months to travel from Independence, Missouri, to Sacramento, California, by wagon. We were going to do it in five days.

farther than the 400 miles a day we averaged. But the *MT* style is more representative of what the pioneers did. You go until you stop. Who knows where the next food, water, or restroom will be?

Scott: An early omen: The Priddle family had trouble finding our rally point in Kansas City. At any rate, the early 19th century Bingham-Waggoner Estate was a perfect starting point. It's hard to believe Independence was once the bleeding edge of the frontier—but now it's a Kansas City suburb with Applebee's and Outback, just like any other.

Christian: The mansion was neat, but I was pretty stoked to get out of there and on to Nebraska. I wanted to be on the trail even if Lincoln was founded after westward migration on the California Trail began. I was happy I snagged the Regal first, too. Nothing like a German-built American wagon to represent the diversity that settled this land.

Scott: A German-built American wagon, an American-built Japanese wagon, and a Mexican-built German wagon. How quintessentially American.

Christian: Lincoln was not an easy drive. Perhaps it was the Buick's seats, but I felt broken when we arrived. I did otherwise like the Buick, though; it rode sweetly, had good passing power on the freeway, and most important, it had radar cruise control and lane keep assist, which is pretty much the modern-day equivalent of a yoke of oxen—it just goes on its own with just the slightest bit of human intervention.

Alisa: It was a cold evening in the Midwest, so I liked the VW's heated seats. I wish it had a heated steering wheel like the other two.

Scott: The Subaru felt the most like a modern interpretation of the prairie schooner wagon. Sturdy, practical, and pragmatic with lots of cargo space and ground clearance. Not as posh as the Buick or as sporty as the VW but ready for anything the road threw at us.

Christian: The worst part was knowing that this was going to be the easiest day, just like it was for the pioneers. Things only got harder as we moved westward.

DAY 2: Lincoln, Nebraska

Alisa: Up early on Friday morning to visit a replica 1800s town at the Stuhr Museum of the Prairie Pioneer. We only lost one traveler when Steve went to check out a train.

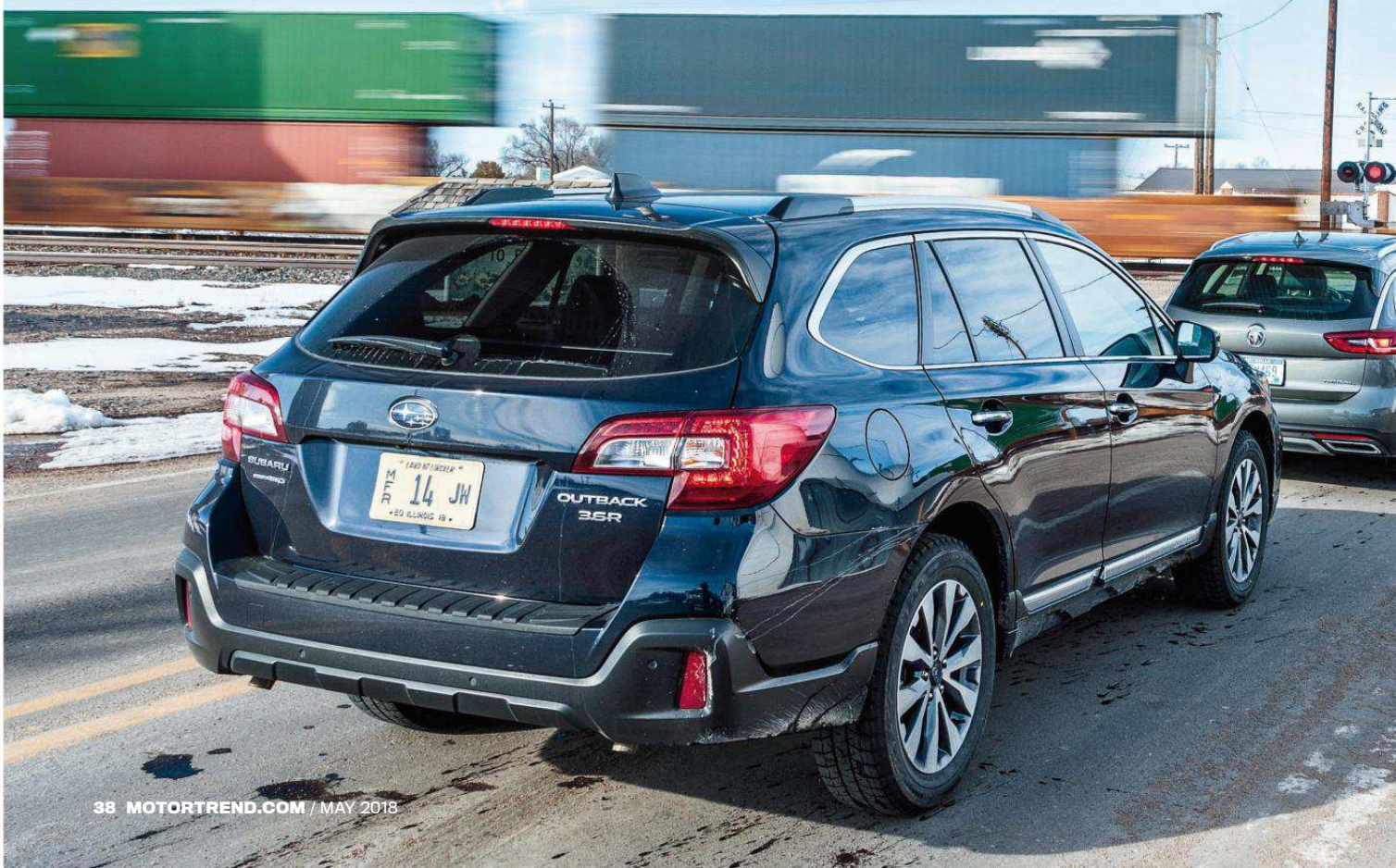
Scott: I believe it was also here that Christian hurled the map into my car and ran away.

Christian: Elayna and I had been "elected" trail bosses for the day and handed paper maps. This sounded like a great idea in theory. But with the realization that we had 600-odd miles to travel that day, I didn't want to be the cause of any delays. So we cheated and used Google Maps to navigate us toward Fort Kearny.

Scott: I knew it! Anyway, I think of forts more like fortresses, and I was surprised to see Fort Kearny looked like a bunch of skinny poles: a tall fence surrounding a couple low buildings. To the pioneers, though, it was civilization in the wilderness.

Christian: I didn't realize pioneer-era forts of the American West weren't like the big colonial forts that dot the Atlantic seaboard. I was kind of let down by Fort Kearny. At least the Golf Alltrack was treating me well. It was a bit poky compared to the Buick, but it was fun to whip around corners and rode fine on the smooth Nebraska interstate. I really liked the panoramic sunroof, which gave everything an open-air feel. Also, as an added bonus, it had radar cruise control and lane keep assist.

Alisa: The VW felt sporty to drive, sure, but there was a lot of wind noise, and on rough pavement it rattled enough



to shake out your fillings. The seats had lumbar support, which was important on such a long drive, but the seat belt dug into my hips.

Scott: At the fort, it was enlightening to get up close to a period-correct wagon. No suspension, sometimes no seats, not even that much space, really. Sure, there was some room to ride, but most of those people walked themselves all the way to California.

Alisa: I was surprised how narrow the wagons were, but given the passes they had to navigate, it makes sense. Modern wagons, on the other hand, just keep getting wider and longer.

Scott: We reached California Hill, the first major grade for westward travelers, later that day. It was the most revelatory part of the trip for me. Partially because the piles of snow and muddy ruts up that access road made it obvious which of our cars were all-wheel drive for traction (Buick, VW) and which were actually meant for going off-road (Subaru, Volvo).

Christian: California Hill was the first time I actually felt a connection with the pioneers, especially seeing the wagon ruts across the Great Plains.

Scott: The idea those ruts would even still be there 175 years later is mind-boggling. It really drove home how much and how little the terrain has changed—and how many people took this route. The pioneers dragged themselves over every hill in the Western U.S. following the sun and those who came before them. There were no roads, much less grading and leveling.

Christian: I lucked out with the Subaru at California Hill. It was so fun blasting through that massive snow bank and "clearing" the trail in the Outback.

Alisa: I will never forget the huge grin on Elayna's face when they went flying through the snow and over a jump. The Buick, having the least ground clearance, was more of a snow plow in the deep stuff, but it made it up the hill and back multiple times.

Christian: I remember Elayna saying, "Oh no, we're not going to make it," on the way up and then encouraging me to go faster when we went back down. It felt like the true modern-day successor to the pioneer wagons: Midwest-built, simple, reliable, and exceedingly capable. The bumps and jostles of California Hill weren't kind to the Outback's stereo, though. It started cycling aimlessly through Sirius, FM, and AM bands. We tried using CarPlay, but it shuffled through all the songs, randomly picked one, and played the first three seconds of it on endless repeat.

Scott: Incredible as the hill was, the sun was dropping fast, and we had to make Chimney Rock by dark. We had about 100 miles to go, and I remember being slightly uncomfortable with how fast we'd have to drive to make it by sunset.

Christian: We were bringing up the rear in the Subie, and every time we passed a pickup, Elayna would wave and mouth "Sorry!" at the drivers. So if you're reading this, uh, we're sorry.

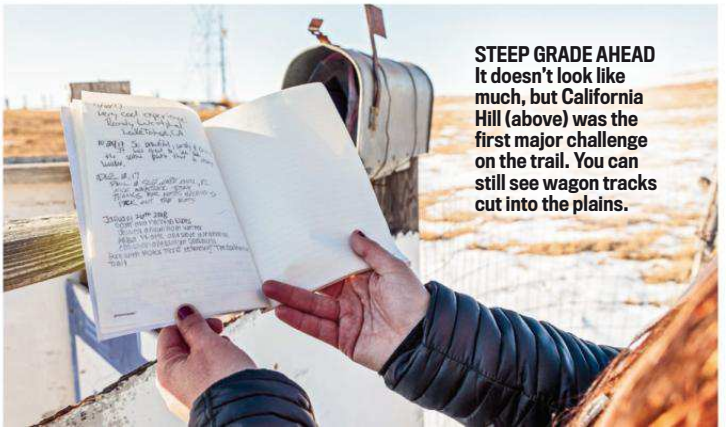
Alisa: We knew we probably couldn't make it by sunset but then decided to go for it. That's a modern luxury. The pioneers couldn't just decide to whip their beasts of burden to get to the next stop faster. Oxen and wagons only go so fast.

Scott: It's still tough to conceptualize the fact that the pioneers made 15 to 30 miles on a good day and we covered the western quarter of Nebraska in an hour.

Christian: I was pretty surprised with the Subaru here—it had plenty of passing power, and it didn't flinch once at any of the potholes, cattle grates, or railroad crossings we passed.

Alisa: The Buick also had ample power for cruising and passing, but it was deceptive. Speed crept up on you before you realized it. I was OK with its lane assist, which corrected without being annoying. The Subaru annoyed me earlier with its constant beeping when its sensors kept finding and losing other vehicles in adaptive cruise mode.

Those first emigrants were on to something; the Transcontinental Railroad largely mirrors the California Trail.



STEEP GRADE AHEAD It doesn't look like much, but California Hill (above) was the first major challenge on the trail. You can still see wagon tracks cut into the plains.

DEER CROSSING We thought we were done for the day after visiting Chimney Rock in Nebraska (below), but a deer had other plans.

Scott: The VW seemed laggy and a lot less willing to downshift than the Buick. Once you got it on the boost, it was fine, but it made you work for it.

Christian: The historical and geological continuity of the prairies is astounding. We saw many of the same sites the pioneers saw more than a century ago. Off to our left was Courthouse Rock, and then, out of nowhere, Chimney Rock burst out over the horizon, guiding us westward.

Scott: It's one thing to read about the landmarks the pioneers used to navigate their way westward, but it really doesn't hit you until you see that spire in the distance and then finally up close.

Christian: I hated leaving Chimney Rock, and I really wanted to continue on the official trail to Fort Laramie. But there really wasn't time, so we made our first "cutoff" in the spirit of the pioneers.

Alisa: The night was inky black. We were less than an hour from Cheyenne and looking forward to dinner and bed. It was a nice, straight run, and we were content to set the cruise control to the speed limit and finish out the day uneventfully. Until—

Scott: I never saw it. The Buick's headlights just dipped and dropped away in my rearview mirror.

Christian: I saw Scott pass it in the VW—the unmistakable silhouette of a buck stepping out on the side of the road. I tapped the brakes and laid on the horn as Elayna went for the walkie. But the son of a bitch jumped in front of the Buick.

Alisa: I saw it but not in time. From my left, a huge deer appeared, about 6 feet tall. He seemed to leap in front of the car.

Christian: It towered over the Regal. It looked for a second like it had been a close call—the deer landed in a cloud of dust on the right side of the road as the Buick kept tracking straight.

Alisa: I just saw a line of fur across the hood. There was no time to react. He hit the right front of the car with a sickening thud, and Steve's eyes shot open. "What was that?" he asked. I kept the car straight then slowed and pulled to the side of the road. We sat there for a moment in shock as the others pulled off and came running over. Yes, we were all right. The deer was nowhere to be seen, but survival was unlikely. Steve tried to exit the car, but his door wouldn't open. With flashlights we surveyed the damage as pieces of metal and plastic fell to the ground.

Scott: I still can't believe how well the Buick took that hit. It looked like Arnold at the end of *Terminator 2*. The headlight was obliterated but still functioning and pointing (mostly) straight. The radiator had a curve in it but didn't burst. Nothing was leaking or interfering with the engine or the steering. From inside the car, the only tell was the check engine light. I was worried we'd be there all night waiting on a tow truck, but damn if the thing didn't drive. You all thought I was crazy wanting to drive it the rest of the way to town, but it did it fine.

Christian: You are nuts. But that thing is a tank. I took over the lead in the Subaru, and from my rearview mirror I couldn't tell anything was awry.

Alisa: It's a testament to the structural integrity of the Regal. That kind of impact could easily have made it undrivable, but the front absorbed the force incredibly well, and the airbags didn't deploy. Still,

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The Golf's cabin is finished in brown leatherette.

The Regal's cabin is arguably the most stylish.

I appreciated Scott taking over driving the Buick. I was still in shock, I think. Following the Buick, the only telltale sign of the impact was a piece of bumper hanging out.

DAY 3: Cheyenne, Wyoming

Alisa: Our fear the next morning was that the Regal wouldn't start, but it did and drove fine to the local Buick dealer.

Scott: I was ready to drive it the rest of the way to California. You all, less so.

CLEAN AND SIMPLE The Outback's cabin isn't fancy but feels rich thanks to quality materials.

Alisa: The fear was being stranded in the middle of nowhere with a broken wagon. Did the story of the doomed Donner Party not teach you anything? We were traveling in the dead of winter, just like they were. If we were stranded in the mountains (forgetting the convenience of roadside assistance for a moment), who would we eat first to survive?

Christian: A) I was the one who was supposed to drive it next; and B) We were going to some pretty remote areas. I wasn't too keen on breaking down in the middle of the Great Salt Lake Desert. Let the record show that I still maintain you're nuts, and Kathryn is nuts for going along with your plan.

Scott: That's how we know we're right for each other. I would've driven it the rest of the way myself, and we were going to be almost exclusively on I-80, which mirrors the California Trail route near perfectly. Help wouldn't have been far at any point.

Christian: Yeah, nothing like driving at 85 mph with a hole punched in your intercooler.

Scott: Well, we didn't know about that at the time.

Alisa: I thought the mechanic would lay out a bunch of info and we'd be debating whether to continue, but when he learned we were headed for Sacramento, he said bluntly, "It'll blow up long before you get there." Pretty cut and dried diagnosis.

Scott: The car was fine as long as you didn't go too deep into the throttle. You Negative Nellies just had to insist we take it to the dealer.

Christian: That's like saying, "My leg is fine so long as I don't walk on it."

Scott: ... as long as you don't run on it.

Alisa: In the end, its epitaph was carved in Cheyenne stone: "The Buick stops here."

Scott: Even though the dealer was able to see us first thing on a Saturday morning, it really screwed up our logistics. There was no way we'd make trail stops at Independence Rock and Fort Bridger in the daylight remaining. At that point, we felt like a proper wagon train.

CHOICES At Jim Bridger's fort, pioneers chose the established trail or the grueling Hastings Cutoff.

Alisa: With the Buick out of commission, we were really living the pioneer story, where wagons broke down and had to be left behind. Those families hopped in the wagons of other families, which is exactly what we did: For each leg, a non-driving couple found themselves in the back seat of the Subaru—which had the biggest back seat and cargo area. At 6-foot-5, Steve really only fit in the back seat of the Subaru.

Scott: Losing the Buick took a pretty heavy toll on morale. We were down a wagon, our comparison was shot, we wouldn't get to see Independence Rock, one couple at a time had to ride the rest of the trip, we were running late, we had to hustle again to make Fort Bridger by sunset, and we still had three days to go.

Alisa: And I had a hell of a headache after hitting that damn deer.

Scott: Of course we'd lose the Buick, which had the largest cargo area and a big back seat. Thankfully, the Subaru's

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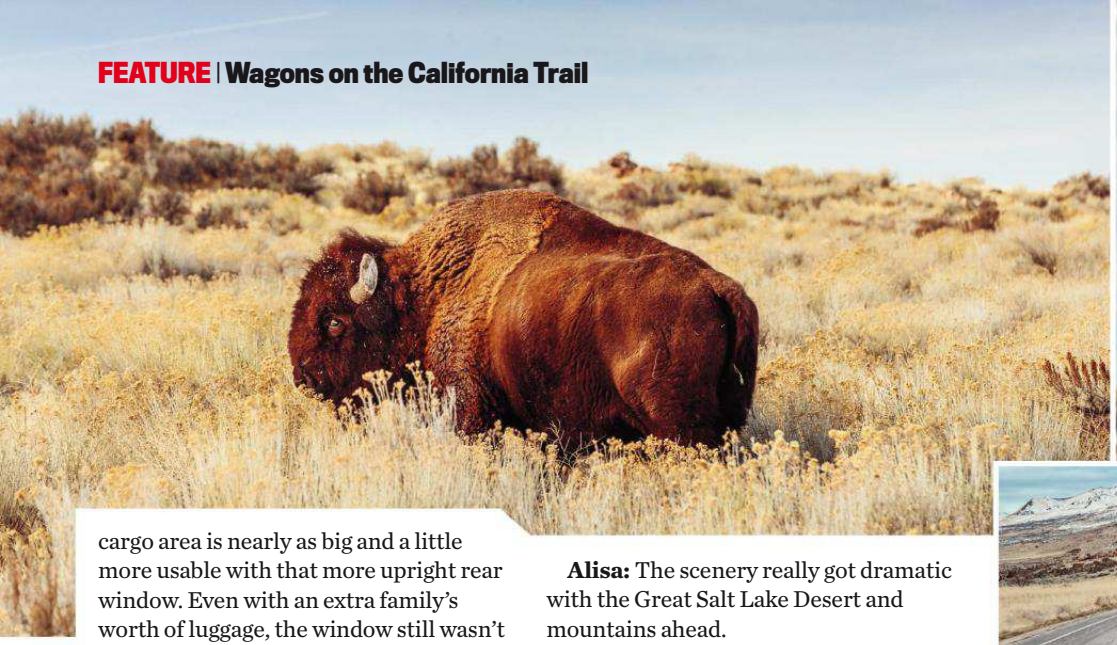

cargo area is nearly as big and a little more usable with that more upright rear window. Even with an extra family's worth of luggage, the window still wasn't blocked. That all said, I'm still surprised at how big the Alltrack's cargo area was despite being the smallest car. It wasn't that much tighter than the other two.

Christian: It might've been morale-related, but I was liking the VW less at this point. After riding and driving the super comfy Subaru, I was getting annoyed with the flintiness in the Alltrack's ride and its lack of passing power at altitude (strange for a turbo). It's not that the Alltrack was super slow. It's just that it wasn't nearly as smooth as the Outback or our dearly departed Regal.

Scott: It was certainly the stiffest ride, which wasn't a plus on a 2,000-mile journey. At least the rest of the day went by without incident.

DAY 4: Salt Lake City, Utah

Scott: Antelope Island State Park might have been off the trail, but it was absolutely worth the diversion to see the buffalo that were such a prominent feature on the pioneer trails.

Christian: Not only did it feel like we were out on the prairie, but it was also awe-inspiring to get up close and personal with wild bison like that.

Scott: You say that, but he didn't take a run at you. One of them took exception to the Volkswagen and charged us. It kept chasing when we drove away.

Christian: It was so funny to watch them run. Those giant buffalo almost skip like little billy goats.

Alisa: The scenery really got dramatic with the Great Salt Lake Desert and mountains ahead.

Scott: The Great Salt Lake Desert is desolate, but it didn't really sink in until we diverted off the highway to the Bonneville Salt Flats. Standing on the salt, it's almost impossible to imagine dragging wagons across it. The sun reflecting off the salt was both blinding and hot, even in January, and the pioneers mostly reached this point of their passage in August.

Alisa: It was the most unique surface. It looked like ice but wasn't slippery, yet it was cold to the touch. And where it was wet it looked like wet cement, waiting to suck in anything that put pressure on it.

Christian: We all think of Bonneville as a place to go fast, but it was sad to think of wagon parties like the Donners' slogging across that expanse. I know if it were me, I would've looked across the 80-mile expanse to Pilot Peak and just said, "You know, Salt Lake City ain't so bad."

If it were me, I would've looked across the 80-mile expanse to Pilot Peak and just said, "You know, Salt Lake City ain't so bad."

FUN N GAMES The Bonneville Salt Flats are fun for hauling ass (and taking dumb photos), but it was a graveyard for many pioneers.

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Alisa: The interesting part was figuring out where the wagon trains crossed the mountains and how and why some parties chose a longer route without knowing it at the time. You stare at mountains and say, "We can go right or left," then luck plays its hand.

Scott: The California Trail Interpretive Center was kind enough to settle our debate over why the Hastings Cutoff, which I-80 roughly follows, detoured south through the Ruby Mountains rather than use the modern pass. Seemed so obvious from the freeway they could've stayed north and gone right across, but the view must've been different from the seat of a wagon 175 years ago.

Christian: I think our perspective was ultimately colored by what we know a car can do. A decent pickup truck would have no issue dragging 10,000 pounds—the average weight of a loaded wagon—up some of those grades. But even a shallow grade was a lot of trouble for oxen. It was humbling to realize the Donners didn't really have a choice. They just had to keep going in the tracks left behind by that dastardly conman Lansford Hastings. The exhibits allowed us to see, hear, and smell (really) the stories of the pioneers. We walked out with a new sense of awe and appreciation. We also were really

Strong shouldered support

The pioneers would have loved our support wagon. Although we were testing mainstream wagons from Buick, Subaru, and VW, as responsible adventurers, we added a stalwart luxury-brand wagon to transport photographers and gear from Missouri to California.

The 2018 Volvo V60 T5 AWD Cross Country is nearing the end of its life cycle (see the 2019 model on page 50) and is so old it still rides on the EUCD platform Volvo shared with Ford. Not that there's anything wrong with that.

Since the V60's origination, Volvo has updated it with a new engine and transmission, digital displays shoehorned into previously cut holes, and as much safety tech as the older electrical architecture can handle. It also means the 240-hp 2.0-liter direct-injection turbocharged inline-four is a bit coarse, the suspension a little harsh, and the interior a bit dated. But for $50,265 as tested, it still has a wagonload of fine traits. The turbo-four and eight-speed auto did not huff and puff or hunt for gears even at high altitudes.

The extra 2.5 inches of ground clearance (relative to the plain V60) and Haldex AWD proved themselves on California Hill, where we plowed through deep snow covering the dirt and ruts of the steep grade. We explored other little-traveled terrain with complete confidence the Volvo would take it all in stride, which it did.

The interior lacks modern soft-pore wood and the latest Scandinavian design, but the rich leather was inviting, and the panoramic sunroof was perfect for taking in the changing scenery. After more than 2,000 miles, features editor Christian Seabaugh said he would welcome the V60's palatial seats in his living room.

Yes, the 2018 model is about to be replaced. But it has aged well and remains one of the most distinctive wagons in the segment.

Words Alisa Priddle

STAYIN' ALIVE Volvo has done more than any other automaker to keep wagons alive in the States. The new one continues the strong tradition.

SPECS 2018 Volvo V60 Cross Country T5 AWD (Platinum) Base Price $42,845 **Price As Tested** $50,265 **Vehicle Layout** Front-engine, AWD, 5-pass, 4-door wagon **Engine** 2.0L/240-hp/258-lb-ft turbo DOHC 16-valve I-4 **Transmission** 8-speed automatic **Curb Weight (F/R dist)** 3,979 lb (59/41%)
Wheelbase 109.2 in **L X W X H** 182.6 x 71.8 x 60.8 in **0-60 MPH** 6.7 sec **Quarter Mile** 15.2 sec @ 89.8 mph **Braking, 60-0 MPH** 120 ft
Lateral Acceleration 0.85 g (avg) ***MT* Figure Eight** 27.2 sec @ 0.62 g (avg) **Real MPG, City/Hwy/Comb** 15.4/32.8/20.2 mpg
EPA City/Hwy/Comb Fuel Econ 22/30/25 mpg **Energy Cons, City/Hwy** 153/112 kW-hrs/100 miles **CO2 Emissions, Comb** 0.78 lb/mile

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Tackling the California Trail

The Oregon Trail gets all the attention, but far more Americans emigrated on the lesser-known California Trail headed toward what would become the Golden State.

Many wealthier Eastern Americans traveled by sailing around Cape Horn to San Francisco. The rest made the treacherous 2,000-mile trip from Independence, Missouri, to Sacramento, California, the same way we did: by wagon.

Our wagons might as well be spaceships compared to those the settlers used. The typical transport was a farm wagon. About 10 feet long and 4 feet wide with no seat, no brakes, and no suspension, they were packed from floor to canvas-covered ceiling with supplies and belongings. Pioneers were expected to walk alongside their wagons as they were pulled across "Indian country" by four pairs of oxen. According to 1849's *The Emigrants' Guide to California* the average cost of a wagon, including the oxen, was $600, about $18,000 today.

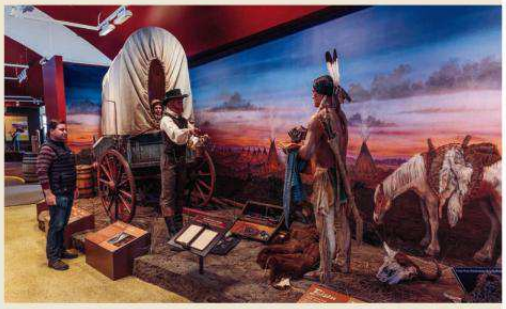
There wasn't much for these pioneers between Independence and Sacramento. This was doubly true for those who headed west before 1849's Gold Rush. Just a couple of trading posts and landmarks dotted the prairies and deserts as settlers passed through Louisiana Purchase land and into Mexican Alta California.

The trail followed the Platte River through Nebraska and into Wyoming, hitting landmarks such as Chimney Rock and Independence Rock before splitting. The established trail avoided Utah and Nevada's Great Basin Desert as much as possible, meandering north into Idaho before dropping down into Nevada's 40 Mile Desert for the final push over the Sierra Nevada. The other route, the Hastings Cutoff, attempted to find a more direct route across Utah and Nevada before rejoining the established trail in Nevada. The cutoff was advertised to shave precious weeks off the 6- to 10-month trip. It didn't.

The Donner-Reed Party, perhaps the best-known wagon train, found out the hard way. They were just the second party to attempt the Hastings route. After essentially building their own road as they passed the Great Salt Lake, they got further delayed crossing the Bonneville Salt Flats, losing wagons and livestock on the 80-mile trek to Pilot Peak on the other side. By the time they hit the Sierras, the cutoff had cost them a month. As they attempted to get their remaining wagons over the mountains, the party got stranded in 20 feet of snow at what's now called Donner Lake in Truckee, California. Thirty-four members of the Donner Party died at their makeshift camp. The rest took drastic measures, including cannibalism, to survive. It wasn't until the following spring that the remaining members were rescued and brought to the trail's end point, Sutter's Fort in downtown Sacramento.

More than 200,000 people emigrated west on the California Trail and by sea between 1841 and 1860. Those first emigrants were on to something; the Transcontinental Railroad and later the Lincoln Highway and I-80 largely mirror the exact trail our ancestors used to move west. **CS**

BARE BONES Unlike the massive Conestoga wagons you've probably seen on TV, most settlers took these smaller and lighter farm wagons across the trail.



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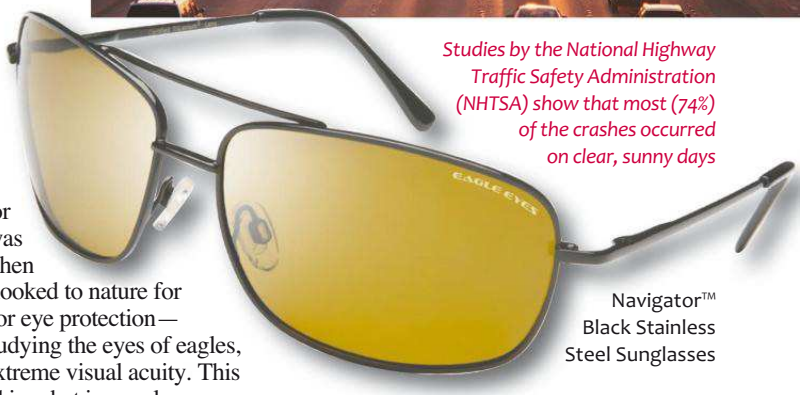

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bummed out. Lots of death and despair out on the trail. All of this struggle, sacrifice, and loss on the gamble of a better life for their families out in California.

Scott: The final stretch to Reno, starting from the Interpretive Center in Elko, Nevada, was a real slog. I can't imagine walking it in the summer. The 40 Mile Desert felt like 400 miles in a car, and Reno didn't come into sight until we were at the city limit.

DAY 5: Reno, Nevada

Christian: The drive was easy up to Truckee, California. Amazing that a pretty town like this sprung up alongside the California Trail, especially considering the tragedy around the area. I wanted to spend more time there, but like the pioneers we had to keep moving.

Scott: It's easy to second-guess the Donner Party's decisions, but standing there, looking way up at the Pioneer Monument's pedestal, the same height as the snow that winter, you realize you have no idea. Then you see Donner Pass on the far side of the lake, and you wonder how they hiked over the ridge, much less dragged wagons over it.

Christian: I cannot imagine climbing Donner Pass with wagons. It's steep in a car, requiring the Golf to downshift a few gears to maintain speed. After that, the rest of the drive was kind of a letdown. All of a sudden there were more cars on the road, sucking me out of the 1840s mindset. It all felt so modern. We weren't taking in the views of the pioneers. We were taking in the views of modern America—drive thrus and all.

Words Mark Rechtin

Making Wagons Cool Again

Crisp, angular, and lush, Volvo's V60 midsize wagon redesigned for 2019 is everything folks want in an SUV—just without that elephantine ride height and abundance of vertical sheetmetal and glass.

Wagons can be cool. This V60 is lithe, sexy transport with the versatility to carry five people and lots of their stuff.

We've already seen Volvo's excellent Scalable Product Architecture (SPA) platform at work with the XC90 (a *Motor Trend* SUV of the Year winner) and the midsize XC60 (a SUVOTY finalist). We also liked its iteration in the sleek, substantial V90 wagon. Now Volvo has shrunk down its big wagon—that's the "scalable" part—from full- to midsize.

The platform is downscaled, but the V60 itself has grown considerably in wheelbase and overall length over the outgoing model, and its lower height makes it stealthy in appearance.

In addition to the traditional internal combustion T5 gasoline engine—a 310-hp turbocharged and supercharged four-cylinder—shoppers will have a choice of the 340-hp T6 AWD gasoline plug-in hybrid or the T8, which delivers 390 hp. The T6 adds a mild hybrid to the T5 engine, and the T8 tacks on two electric motors to boost performance (with some weight penalty).

On the safety side, the V60 will come with automatic braking and detection systems that recognize pedestrians, cyclists, and large animals. On well-marked roads, semi-autonomous steering, acceleration, and braking is possible up to 80 mph. Lane departure and cross-traffic alerts are also part of the safety suite.

Volvo's tablet-sized infotainment system features Apple CarPlay, Android Auto, and 4G. Possessing a V60 also will be possible via the Care by Volvo subscription service.

The 2019 V60 will go on sale in the U.S. in early 2019, according to the company website.

NEW KID ON THE BLOCK Volvo's sharp new V60 was just announced as we were getting on the plane to Missouri. Next time we'll be sure to bring it along.

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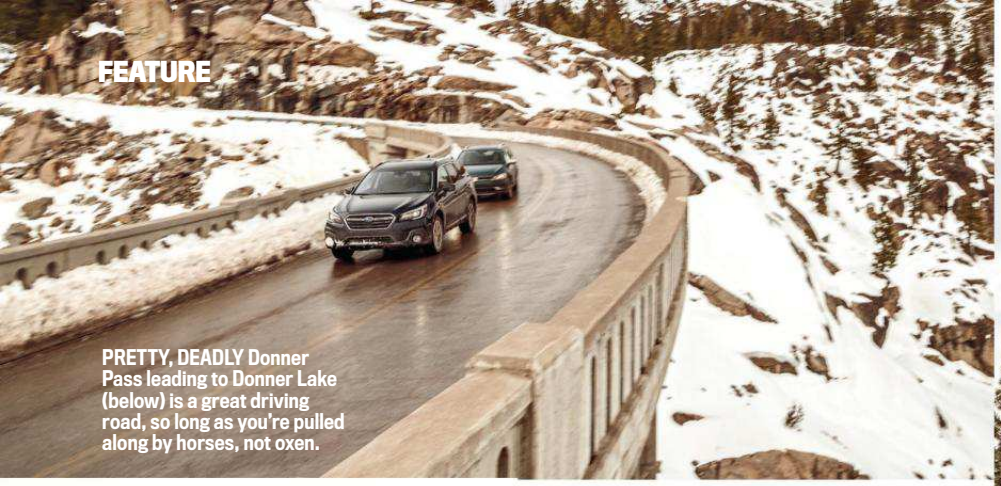


PRETTY, DEADLY Donner Pass leading to Donner Lake (below) is a great driving road, so long as you're pulled along by horses, not oxen.

Alisa: We experienced traffic for the first time. It felt like our adventure was coming to an end. It was turning into a regular car trip.

Scott: To find Sutter's Fort—the endpoint of the California Trail—plopped right in midtown Sacramento just off the freeway was a real juxtaposition. To think that little thing was the light at the end of the trail for people who'd just walked across half the continent.

Christian: After the quiet solitude and humbleness of the past few days, that was a bit jarring. I escaped for a bit in the original central building. It's amazing that this is what was greeting pioneers at the end of the trail. My first inclination was ... well, was it worth it? But then I started really thinking about it: This would have been the first building settlers had seen in months.

Alisa: We were completely exhausted, and we were not even remotely roughing it. I have so much appreciation for the families that risked everything to make the trek.

Scott: And really, it didn't end there. The settlers still had to go find a bit of land and build a life on it. Like the pioneers, it didn't end there for us, either. The Priddle clan needed to get to San Francisco, and the Evans, Seabaugh, and Walker families all needed to get to Los Angeles. Even after our historically appropriate Mexican lunch to celebrate, there was a long way to go to get to our homesteads.

... And then the Subaru's sunroof shattered for no apparent reason.

We couldn't let it end there, so go online to MotorTrend.com to find out how we ranked the cars once we got a new Buick to test in Los Angeles. ■

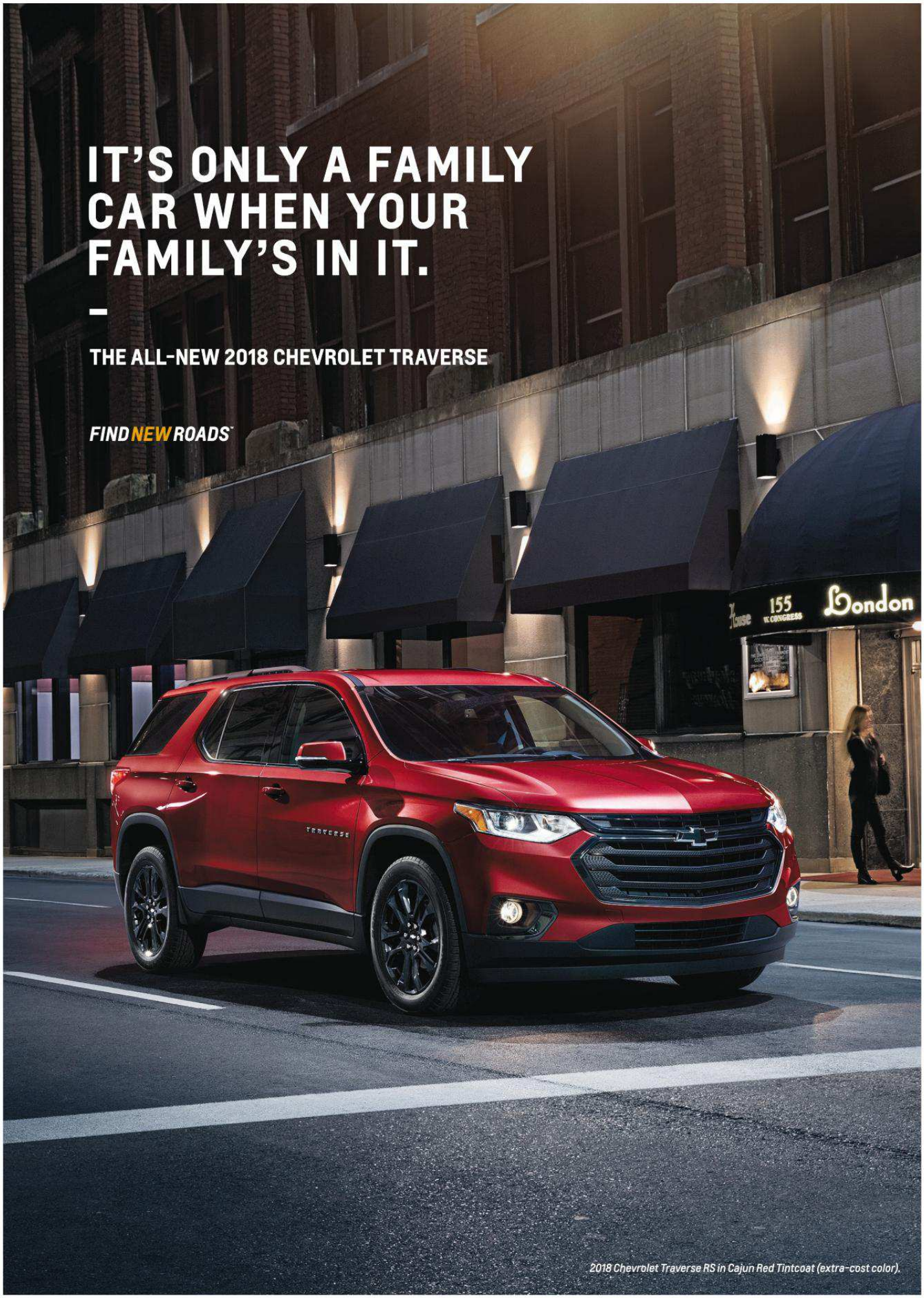
END OF THE LINE Sutter's Fort is the end point of the California Trail. The base of the Pioneer Monument (above) marks the height of the snow at what was the end point for the Donner Party.

We were completely exhausted, and we were not even remotely roughing it.

POWERTRAIN/CHASSIS	2018 Buick Regal TourX (Essence)	2018 Subaru Outback 3.6R AWD (Touring)	2018 Volkswagen Golf Alltrack TSI 4Motion (SEL)
DRIVETRAIN LAYOUT	Front-engine, AWD	Front-engine, AWD	Front-engine, AWD
ENGINE TYPE	Turbocharged I-4, alum block/head	Flat-6, alum block/heads	Turbocharged I-4, iron block/alum head
VALVETRAIN	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl
DISPLACEMENT	121.9 cu in/1,998cc	221.5 cu in/3,630cc	109.7 cu in/1,798cc
COMPRESSION RATIO	9.5:1	10.5:1	9.6:1
POWER (SAE NET)	250 hp @ 5,500 rpm*	256 hp @ 6,000 rpm	170 hp @ 4,500 rpm
TORQUE (SAE NET)	295 lb-ft @ 3,000 rpm*	247 lb-ft @ 4,400 rpm	199 lb-ft @ 1,600 rpm
REDLINE	6,500 rpm	6,500 rpm	6,000 rpm
WEIGHT TO POWER	14.9 lb/hp	15.1 lb/hp	20.6 lb/hp
TRANSMISSION	8-speed automatic	Cont variable auto	6-speed twin-clutch auto
AXLE/FINAL-DRIVE RATIO	3.08:1/2.07:1	4.11:1/2.23:1	4.38:1 (1-4), 3.33:1 (5, 6, R)/2.53:1
SUSPENSION, FRONT; REAR	Struts, coil springs, anti-roll bar; multilink, coil springs, anti-roll bar	Struts, coil springs, anti-roll bar; multilink, coil springs, anti-roll bar	Struts, coil springs, anti-roll bar; multilink, coil springs, anti-roll bar
STEERING RATIO	15.6:1	14.0:1	13.6:1
TURNS LOCK-TO-LOCK	2.6	2.8	2.7
BRAKES, F; R	12.6-in vented disc; 11.3-in disc, ABS	12.4-in vented disc; 11.8-in vented disc, ABS	11.3-in vented disc; 10.7-in disc, ABS
WHEELS	8.0 x 18-in cast aluminum	7.0 x 18-in cast aluminum	7.5 x 18-in cast aluminum
TIRES	235/50R18 97V (M+S) Continental ProContact TX	225/60R18 100H (M+S) Bridgestone Dueler H/P Sport AS	225/40R18 92Y Pirelli Cinturato P7 (run-flat)†
DIMENSIONS			
WHEELBASE	111.4 in	108.9 in	103.5 in
TRACK, F/R	62.8/63.0 in	61.8/62.2 in	60.9/59.7 in
LENGTH X WIDTH X HEIGHT	196.3 x 73.3 x 58.4 in	198.6 x 72.4 x 66.1 in	180.2 x 70.8 x 59.6 in
GROUND CLEARANCE	5.7 in	8.7 in	6.9 in
TURNING CIRCLE	40.0 ft	36.1 ft	35.8 ft
CURB WEIGHT	3,726 lb	3,869 lb	3,510 lb
WEIGHT DIST, F/R	58/42%	57/43%	56/44%
SEATING CAPACITY	5	5	5
HEADROOM, F/R	38.8/39.6 in	38.3/38.9 in	38.6/38.6 in
LEGROOM, F/R	42.1/36.9 in	42.9/38.1 in	41.2/35.6 in
SHOULDER ROOM, F/R	56.9/55.4 in	58.1/57.3 in	55.9/53.9 in
CARGO VOL BEHIND F/R	73.5/32.7 cu ft	73.3/35.5 cu ft	66.5/30.4 cu ft
TEST DATA			
ACCELERATION TO MPH			
0-30	2.1 sec	2.9 sec	2.3 sec
0-40	3.2	4.1	3.5
0-50	4.4	5.4	5.1
0-60	6.3	6.9	7.1
0-70	8.2	8.7	9.5
0-80	10.6	10.9	12.6
0-90	13.4	13.5	16.3
0-100	16.5	—	—
PASSING, 45-65 MPH	3.4	3.1	4.0
QUARTER MILE	14.7 sec @ 94.7 mph	15.2 sec @ 95.9 mph	15.5 sec @ 87.8 mph
BRAKING, 60-0 MPH	118 ft	125 ft	117 ft
LATERAL ACCELERATION	0.88 g (avg)	0.80 g (avg)	0.85 g (avg)
MT FIGURE EIGHT	26.2 sec @ 0.69 g (avg)	27.4 sec @ 0.63 g (avg)	27.0 sec @ 0.64 g (avg)
TOP-GEAR REVS @ 60 MPH	1,600 rpm	1,450 rpm	2,100 rpm
CONSUMER INFO			
BASE PRICE	$35,995	$36,310	$36,510
PRICE AS TESTED	$41,600	$39,605	$36,510
STABILITY/TRACTION CONTROL	Yes/Yes	Yes/Yes	Yes/Yes
AIRBAGS	10: Dual front, f/r side, f/r head, front knee	7: Dual front, front side, f/r curtain, driver seat pan	6: Dual front, front side, f/r curtain
BASIC WARRANTY	4 yrs/50,000 miles	3 yrs/36,000 miles	6 yrs/72,000 miles
POWERTRAIN WARRANTY	6 yrs/70,000 miles	5 yrs/60,000 miles	6 yrs/72,000 miles
ROADSIDE ASSISTANCE	6 yrs/70,000 miles	3 yrs/36,000 miles	3 yrs/36,000 miles
FUEL CAPACITY	16.4 gal	18.5 gal	14.5 gal
REAL MPG, CITY/HWY/COMB	18.2/32.3/22.6 mpg	19.6/27.9/22.6 mpg	21.3/31.4/24.9 mpg
EPA CITY/HWY/COMB ECON	21/29/24 mpg	20/27/22 mpg	22/30/25 mpg
ENERGY CONS, CITY/HWY	160/116 kW-hrs/100 miles	169/125 kW-hrs/100 miles	153/112 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.81 lb/mile	0.86 lb/mile	0.78 lb/mile
RECOMMENDED FUEL	Unleaded premium	Unleaded regular	Unleaded regular

EQUA REAL MPG

*SAE certified † Not original equipment (OE) tire


IT'S ONLY A FAMILY CAR WHEN YOUR FAMILY'S IN IT.
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THE ALL-NEW 2018 CHEVROLET TRAVERSE
FIND NEW ROADS™
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TRAVERSE
2018 Chevrolet Traverse RS in Cajun Red Tintcoat (extra-cost color).

THE FAMILY SUV
TAKES A TRIP TO THE GYM.

Toning up the all-new 2018 Traverse.

It wasn't long ago that car enthusiasts simply tolerated the family ride in the garage. But engineers at Chevrolet have been busy making today's vehicles more fun to drive. One of the first results is the 2018 Traverse. It's got all the room you need to handle your family and cargo, while giving you effortless performance and more power without sacrificing efficiency. The new Traverse is nearly 300 pounds lighter than its predecessor and also sports a new 9-speed automatic transmission. Those combine for better fuel efficiency,[1] a smoother ride and better acceleration. You can choose from five different trim levels on Traverse equipped with the standard 3.6L V6 engine, or choose the newly available 2.0L turbo offered exclusively with the RS trim.

TWO POWERFUL ENGINES.
ONE TOUGH CHOICE.

Choose an engine based on your driving needs.

The new Traverse offers two engines — a responsive 2.0L turbo on the RS trim or a 3.6L V6 engine that's standard on the other trim levels.

By the numbers:	*2.0L Turbo*	*3.6L V6*
HORSEPOWER	257 hp	310 hp
PEAK TORQUE	295 lb.-ft.	266 lb.-ft.
EPA-EST. FUEL ECONOMY	20 MPG city/26 hwy	18 MPG city/27 hwy
TOWING CAPABILITY[2]	N/A	5,000 lbs.

2018 Chevrolet Traverse High Country shown with Jet Black/Loft Brown perforated leather-appointed seat trim.

1 2.0L turbo 4-cylinder engine: EPA-estimated 20 MPG city/26 highway (FWD); 3.6L V6 engine: EPA-estimated 18 MPG city/27 highway (FWD), 17 MPG city/25 highway (AWD). 2 Before you buy a vehicle or use it for trailering, carefully review the Trailering section of the Owner's Manual. The weight of passengers, cargo and options or accessories may reduce the amount you can tow. 3 LED headlamps are standard on Premier and High Country.

BRING ON
JUST ABOUT ANYTHING.

Ready for rain, ice, snow or shine.

When conditions get worse, Traverse can help. You can thank its available Traction Mode Select and switchable all-wheel drive that lets you select the right traction for conditions on the fly. The twin-clutch AWD system on High Country independently controls torque to each rear wheel to help keep your Traverse well planted to the road, even on mixed road surfaces. Variable-assist Electric Power Steering and a new 5-link independent rear suspension deliver confident steering as well as great maneuverability in tight spaces. And when the weather turns bad, newly developed available LED D-Optic™ headlamps[3] combine multiple high-power LEDs with precise, injection-molded lenses for high-performance lighting in challenging conditions.

MAKE YOUR OWN
STATEMENT.

Pick the attitude that matches your style.

There are three new trim level options, including the RS with its Black Ice details. For a bolder look, you can also order a Redline Edition that is available with Red-accented Black-painted aluminum wheels. And if it's luxury you want, High Country is fully equipped with Loft Brown premium leather-appointed seating surfaces, sueded microfiber accents, high-polished aluminum 20-inch wheels, ventilated front seats, a huge Dual SkyScape® 2-panel power sunroof and standard advanced all-wheel drive.

BACK ON

Words Jonny Lieberman

THE GROUNDBREAKING QX50 MOVES INFINITI FORWARD

At some point in the past I spent time behind the wheel of the old QX50; however, I have no memory of doing so and as such hold no opinion of Infiniti's compact premium SUV. Well, other than it was never much to look at.

The all-new QX50 is handsome. Detractors will grumble that it resembles a Mazda CX-3. So what? The Ford Fusion has looked like an Aston Martin for years. We've all survived. The QX50 shows off Infiniti's talent and affinity for putting sharp creases into curved metal. Such handiwork is impressive from a stamping perspective with the added benefit of looking premium. The interior is (for the most part) pretty spiffy, as well—especially on higher-trim models with the blue suede accents. I do have one giant gripe, but let's save that for later.

But enough about design and materials. The QX50 will go down in the annals of

car (geek) history for one very important reason: It's the first production vehicle to come with Infiniti's VC-Turbo 2.0-liter inline-four. The VC stands for variable compression, and the VC-Turbo can run at anywhere from 8:1 to 14:1. If the governing computer sees a need for 10.5:1, the engine's compression can switch to that ratio in an instant. Long story short, the high 14:1 compression ratio is great for low-load, high-mpg cruising. The 8:1 ratio is best for creating big power with the help of a turbocharger. Based on the driver's right foot, the engine literally repositions the bottom end of the connecting rod to vary the compression.

Peak output is 268 horsepower at 5,600 rpm and 280 lb-ft of torque from 1,600 to 4,800 rpm. The VC-Turbo replaces the old VQ 3.7-liter V-6, which was good for 325 hp at 7,000 rpm and 267 lb-ft of torque at 5,200 rpm. Obviously, the old engine made a ton more power than the VC-Turbo. But look at where the VQ delivered its power; no previous-gen QX50 owner ever intentionally revved his or her engine out to 7,000 rpm. Plus, not only is torque increased with the new engine, but its peak also shows up at very low revs.

As the ever-quotable Bob Lutz famously said, "Americans buy horsepower but drive torque." In other words, yeah, the "big" number is lower, but do people buying SUVs like the QX50 actually care? I doubt it, and Infiniti is betting

With the VC-Turbo, Infiniti joins the chorus of innovators proving the internal combustion engine ain't dead yet.

on them not, either. Besides, compared to the 2.0-liter turbo I-4s found in the competition—Audi Q5, Mercedes-Benz GLC, BMW X3, Lexus NX—the Infiniti nonetheless makes more horsepower. Also important as gas prices edge upward again: Fuel economy is up by a whopping 35 percent compared to the old QX50—26–27 mpg combined instead of 20.

The VC-Turbo has some other cool features, too, such as a multipath cooling system, variable geometry oil pumps, and plasma-transferred wire arc cylinder liners (as found on the Nissan GT-R). The turbo bolts right to the cylinder head to reduce spool-up time and turbo lag.

In the early morning light of the rapidly approaching age of the electric car, we are seeing wonderful engineering Hail Marys. Take Mercedes-Benz's new M256 inline-six, a beltless, starterless, alternatorless 48-volt tour de force, complete with an electric supercharger. Mazda has developed a fuel-saving, torque-boosting compression ignition system. A Swedish company called Freevalve is set to put a camless valvetrain into production. With the VC-Turbo, Infiniti joins the chorus of innovators proving the internal combustion engine ain't dead yet.

VC-Turbo works quite well. I was never in a situation where the QX50 felt underpowered. On crowded L.A. streets where we rarely managed to go the speed limit, the engine was calm and quiet, and I wasn't even thinking about the technological marvel sitting inches in front of my right foot. The light turned green, and taking one for science, I stomped my right foot down. Just like that, the VC-Turbo roared to life. I was suddenly piloting a quick SUV, just as advertised. You can't detect when the compression ratio changes. In fact, attaching the conrods to the moveable secondary linkage smooths things out to the point where the engine doesn't need balance shafts. I truly am blown away by this engine.

That said, I have real issues with Infiniti's choice of transmission. The VC-Turbo is a transverse-mount engine and thus won't play with the fine seven-speed automatic found in the Q50 and other Infiniti products. And rather than talk with its joint venture besties Mercedes-Benz to borrow the reinforced seven-speed dual-clutch from the GLA45 (which Infiniti already uses in down-rated form in the QX30), Infiniti instead installed the ponderous, oft-derided CVT found in the QX60 and both the Nissan Maxima and Pathfinder.

Why would you bring to market one of the most technologically advanced engines ever sold and mate it to a hated transmission? Cost savings, likely. But it's a bad pairing. I'd imagine a constant gear ratio would allow the engine to vary the compression most efficiently. Even if that's not the case, and especially when you put the QX50 into Sport mode, the transmission does everything enthusiastic drivers hate about CVTs. It holds the engine at high revs even if your foot is off the throttle. Plus, you know, it doesn't actually shift.

Now, to the structure: The entire QX50 platform is new. The body-in-white is 23 percent stiffer than before. Lighter, too, but we'll wait until we plop one on our scales to be sure exactly how much. The old QX50 was derived from the G sedan (now called the Q50) and as such was front-engine and rear-wheel drive. That's a great combination for a sport sedan but, as it turns out, a fairly crummy way to lay out a small SUV. The new QX50 is front-engine, front-wheel drive, but (of course) it can be had with AWD.

Why is this better? Basically, a front-engine, rear-drive vehicle has

ODD KNOB Infiniti's rotary knob controls the top screen only, which makes zero sense.

its transmission behind the engine, eating up precious cabin space. In a FWD-derived vehicle, the transmission can be next to the engine. In terms of roominess and cargo capacity, FWD platforms are the better way to build a people schlepper. Years ago a friend of mine had to sell her Infiniti SUV because her infant's car seat wouldn't fit. No such problems will happen with the new QX50. In fact, the spacious baby hauler now sports reclining rear seats.

Like the Q50 sedan and Q60 coupe, the QX50 comes with Infiniti's much maligned—and let's be real, rightly maligned—steer-by-wire technology. However, unlike the Q50 and Q60, the QX50's virtual steering feels pretty good. The SUV steers just like a normal vehicle and as well as any of its competitors. Sports car good? No way, but then that's not the segment the QX50 competes in.

Speaking of steering by wire, the QX50 can be had with Nissan and Infiniti's ProPilot Assist, which under certain conditions can steer, brake, and accelerate the vehicle. Until passenger cars come packing actual artificial intelligence, it's best to think of all systems resembling ProPilot Assist as fancy forms of cruise control. Basically, they can relieve a little bit of the suffering from being stuck in stop-and-go traffic. In addition, these not-quite-autonomous systems prevent you from killing others if you look at a text message or open a bottle of water. (Ahem, don't text and drive.)

But while ProPilot spares headaches, I was frustrated by the dual-screen navigation and entertainment system. Infiniti claims that two screens are preferred by customers because that setup allows the map to be permanently displayed. Sure, always having a map is great. But there's an excellent way to have a permanent map (like in my Audi Allroad) as opposed to Infiniti's bad way. And like Lexus, Infiniti weirdly refuses to put current mapping technology into its vehicles. No one will explain why.

Perhaps worst of all, the fonts and user interfaces for the two display screens are a UX nightmare. The lower touchscreen is controlled not by the rotary controller (that's for the top screen) or even by touching it but by a bunch of plastic buttons below the bottom screen. And on the sides. The whole mess makes no sense. It's as if a haptic hand grenade went off and the designers said, "It's good enough. Let's get lunch."

Premium SUVs are huge sellers and huge profit centers for carmakers. Get it right, and the money rolls in. Get it wrong, and, well, there's really no getting it wrong. The stakes are just too high.

For the most part, Infiniti got the QX50 right. The exterior is gorgeous and looks premium. It's fuel-efficient yet powerful. It's small on the outside but large on the inside. The QX50 is even priced competitively, starting at $37,545, with a fully loaded AWD model clocking in at $61,995. My quibbles aside, the most competitive segment in the luxury car world just got a whole lot more cutthroat. More like this, Infiniti. More like this. ■

2019 Infiniti QX50 2.0t	
BASE PRICE	$37,545-$39,345
VEHICLE LAYOUT	Front-engine, FWD/AWD, 5-pass, 4-door SUV
ENGINE	2.0L/268-hp/280-lb-ft turbocharged DOHC 16-valve I-4
TRANSMISSION	Cont variable auto
CURB WEIGHT	3,800-3,950 lb (mfr)
WHEELBASE	110.2 in
LENGTH X WIDTH X HEIGHT	184.7 x 74.9 x 66.0 in
0-60 MPH	6.2-6.4 sec (*MT* est)
EPA CITY/HWY/COMB FUEL ECON	24/30-31/26-27 mpg
ENERGY CONSUMPTION, CITY/HWY	140/109-112 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.73-0.74 lb/mile
ON SALE IN U.S.	Currently

Stretch Appeal

Words Zach Gale
Photographs Robin Trajano

When you focus on what you're good at instead of posing as something you're not, you get a success story like the Lexus RX. But even the RX luxe-crossover has its limits—hauling multiple passengers—so Lexus is extending its appeal with an extended version.

About 4 inches longer than the regular RX models, the 2018 RX 350L comes in front- and all-wheel-drive V-6-powered variants, and an all-wheel-drive hybrid comes in the spring. With a third row squeezed in the back, the second row has been raised a little to allow for third-row foot room. It's a nice touch, and there's still sufficient second-row headroom. But the third row is cramped.

Counterintuitively, the true value of occasional-use three-row crossovers like the RXL isn't necessarily in those extra seats but in the extra cargo space when the third row is folded down. Except here, with the third-row seats down, you'll actually have less space than you would behind the regular RX 350's second-row seats when measured from the floor to the tonneau cover: 18.6 cubic feet in the RX 350 to the RX 350L's 15.3 cubic feet. (Those seats fold away, but they don't disappear, after all.)

Overall, the maximum amount of cargo space in the regular RX 350 is 56.3 cubic feet, whereas Lexus says the max in the RX 350L is 58.5 cubic feet. Yep, 2.2 whole cubic feet more with both rows folded.

The third-row seats are fully power operated, but you have to hold down the button while the seats fold and shift downward. The entire process takes about 14 seconds to fold down or about 17 seconds to get them back up.

Under the hood is a 290-hp, 263-lb-ft version of the familiar 3.5-liter V-6 powering many Toyota and Lexus vehicles. The 2018 RXL is best appreciated when you take it easy. Not many people expect an RX to drive as engagingly as an Alfa Romeo Stelvio, but a bit more body control would be appreciated. As for the steering, its lighter effort is appropriate for a luxury crossover, and its disconnectedness is consistent with the car's focus on luxury, as is the quiet interior. The suspension provides a comfortable ride over imperfections, but braking performance from 60 mph is on the high side.

The RXL's available 12.3-inch screen looks great and allows the driver to split the display to show various info simultaneously, but it lacks Apple CarPlay or Android Auto compatibility. And although the Lexus Remote Touch's mouselike controller's armrest and handrest feel luxurious, the user interface still draws too much attention from the road. Introducing a more intuitive system and doing a better job of packaging cargo space would go a long way toward earning our recommendation of the RX 350L.

The RX rides smoothly over road imperfections, and nearly everything you touch and see gives off a rich impression. Is the extra length worth $4,400? Take a couple roll-aboards and strollers to your test drive to see for yourself. ■

SIXES AND SEVENS
The RXL comes standard in a seven-seat setup, but a six-seat version is also available.

SPECS 2018 Lexus RX 350L: Base Price $48,665 **Price As Tested** $52,930 **Vehicle Layout** Front-engine, FWD, 7-pass, 4-door SUV
Engine 3.5L/290-hp/263-lb-ft DOHC 24-valve V-6 **Transmission** 8-speed automatic **Curb Weight (F/R dist)** 4,448 lb (55/45%)
Wheelbase 109.8 in **L x W x H** 196.9 x 74.6 x 67.3 in **0-60 MPH** 7.5 sec **Quarter Mile** 15.7 sec @ 91.1 mph **Braking, 60-0 MPH** 128 ft
Lateral Acceleration 0.76 g (avg) ***MT* Figure Eight** 28.5 sec @ 0.60 g (avg) **Real MPG, City/Hwy/Comb** 17.9/26.9/21.1 mpg
EPA City/Hwy/Comb Fuel Econ 19/26/22 mpg **Energy Cons, City/Hwy** 177/130 kW-hrs/100 miles **CO2 Emissions, Comb** 0.90 lb/mile

EQUA REAL MPG

Actual size is 40.6 mm

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The Everyday Ferrari

Driving the most market-researched exotic in history

Motor Trend

Words Angus MacKenzie

Market research never created a great car.

No one asked GM to build a Corvette or Ford a Mustang. The engineers and entrepreneurs who made cars that changed the world—Ettore Bugatti and Ferdinand Porsche, Henry Royce and André Citroën, to name but a few—built what they knew was right, not something shaped by the opinions of others. So what, then, are we to make of the 2019 Ferrari Portofino, the most market-researched new Ferrari in history?

Deep breath ... the Portofino is not a great Ferrari. Maranello's newest GT joins a lineup that includes both the scintillating 488 GTB (our 2017 Best Driver's Car) and the spectacular 812 Superfast, and it's competing with a back catalog crammed with glories such as the 275 GTB and the Enzo. Viewed in that context, the Portofino is simply a very good Ferrari. Faint praise, be damned: It's the perfect Ferrari for those who want a fast and elegant, refined and luxuriously equipped 21st century *gran turismo* they can drive 24/7.

At a shade over 200 grand, the Portofino replaces the California, the best-selling Ferrari ever and a car that has transformed the iconic Italian sports car builder's customer base: Roughly 70 percent of Californias are owned by people who had never owned a Ferrari before, says Ferrari marketing chief Nicola Boari. It is, he grins, "one of those

→ More Ferrari Portofino

rare moments where a marketing target became reality."

Hardcore *Ferraristi* might have sniffed at the California's softish road manners and slightly frumpy styling, but newcomers to the brand liked its snappy acceleration, snarling exhaust, and convertible hardtop. It didn't hurt that it was the least expensive means of getting behind the wheel of a new car carrying the fabled Prancing Horse badge. Boari says 85 percent of California owners use their cars as daily drivers—2.5 times the number who drive Ferrari sports models every day. The rear seats are occupied 30 percent of the time.

Sharing its basic architecture and much of its componentry with the California, the 2019 Portofino has therefore been carefully designed to build on that car's strengths and address its weaknesses. It's lighter, quicker, and sharper to drive. But Ferrari understands that shaving a couple tenths off the 0–60 time isn't as meaningful to this car's customer base as increasing the highway cruising range to 460 miles, stretching rear legroom by 2 inches, and allowing the retractable hardtop to operate at speeds up to 25 mph.

The Portofino's 105.1-inch wheelbase is identical to that of the California, but its redesigned bodywork is 0.7 inch longer overall, 1.2 inches wider, and 0.1 inch lower with the roof up. Ferrari Design's Adrian Griffiths cites the legendary Daytona coupe as an influence, and you see it in

the way the roof sweeps back to the trunk in a graceful, unbroken line. With the roof up or down, tauter surfacing, crisper character lines, and simpler detailing give the Portofino an elegant yet muscular presence on the road.

The interior borrows much from the GTC4Lusso, including the 10.3-inch infotainment interface at the center of the dash and the mini-screen that displays passenger views of performance data, navigation status, and entertainment info.

Combining leather, carbon fiber, and aluminum finishes, the Portofino looks and feels plush, albeit with techy overtones. Despite the claimed increase in legroom, the rear seats are still only suitable for carrying very small children for very short distances.

As part of the platform's evolution from California T to Portofino, it has been heavily reworked to lower mass and improve stiffness. Overall weight has been reduced 10 percent, and torsional rigidity is up 35 percent. There's been a 50 percent increase in the rigidity of the suspension mounting points, as well, allowing engineers to equip the Portofino with a more precisely controlled suspension. Front and rear springs are therefore 15.5 and 19.0 percent stiffer, respectively, and the latest iteration of MagneRide dampers better controls body motions and reduces roll. At the rear is Ferrari's third-generation E-Diff; up front is electric power steering with a ratio 7 percent sharper than the California's.

Under the hood, the 3.9-liter twin-turbo flat-plane-crank V-8 has been upgraded to deliver 591 hp at 7,500 rpm and up to 561 lb-ft of torque from 3,000 rpm to 5,250 rpm—increases of 38 hp and 4 lb-ft. Ferrari also claims the engine gets to maximum boost 5 percent quicker than the Cali T's, thus improving throttle response. New engine components include a single-piece cast exhaust manifold/integrated turbo housing designed to eliminate internal flanges that interfere with the exhaust pressure waves hitting the turbine. There's also a new free-flow exhaust system, new pistons, and conrods capable of handling 10 percent higher cylinder pressures.

More power and less weight mean more performance, and the $210,738 Portofino has a top speed comfortably above 200 mph and a conservatively estimated 0–60 time of less than 3.5 seconds—a California we tested hit 60 in 3.5 seconds. Where does this land you for bragging rights with your bench-racing buddies at the pub? This Ferrari is quicker than a Mercedes-AMG SL65 roadster, the new Aston Martin DB11 V8 Volante, and the upcoming Bentley Continental GT convertible—all of which

LUXURY TECH The Portofino cockpit is lavishly trimmed. Its central 10.3-inch infotainment interface and mini-screen in front of the passenger are the same as in the GTC4Lusso. The retractable hardtop can be raised or lowered in 14 seconds at speeds up to 25 mph.

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Switch it to Sport mode, and the Portofino stiffens its sinews and sharpens its responses.

also have price tags north of $200,000. This is a mature Ferrari, not a soft one.

And that's exactly how the Portofino feels on the road.

With the steering wheel–mounted manettino switched to Comfort mode and the seven-speed dual-clutch auto left to its own devices, the twin-turbo V-8 delivers a satisfying surge of thrust whenever you squeeze the gas pedal. The transmission adroitly exploits the meaty midrange torque, quickly selecting the highest gear possible to reduce fuel consumption and noise. The Portofino will happily waft along a country road in seventh, the engine turning 1,500 rpm.

Twist the manettino to Sport (one stop farther turns off stability control; as befits this car's intended function, there is no Race mode) and press the D button once to switch the transmission to manual, and the Portofino stiffens its sinews and sharpens its responses. Even with the suspension in Sport, the ride remains composed, though; despite rolling on low-profile high-performance tires, impact harshness and wheel patter are impressively suppressed on gnarly roads. Body rigidity is excellent, with no rattles or squeaks—even with the roof up—and few shimmies back through the steering column or floor.

Driven quickly, the Portofino responds best to hard braking before corner entry and early application of power on exit. The active torque vectoring—combined with quicker steering—delivers crisp response on the way into corners and a ton of traction on the way out. However, despite its light and accurate steering and plenty of grip, you don't get much sense of what's actually happening where the front tires meet the tarmac.

If you want a quicker, more focused Ferrari, buy a 488 GTB or Spider. What's clever about the Portofino is that it's engaging to drive at moderate speeds. Brisk cruising is this Ferrari's forte; it flows beautifully down the road, the chassis displaying delightful coherence and consistency. Roof up, it's a comfortable long-distance tourer and practical daily driver. Roof down on a sunny day and a winding road, it's a fun-to-drive sports car. And that duality of purpose is exactly what the Portofino's customers want from their Ferrari. Performance of intended function?

Nailed it. ■

2019 Ferrari Portofino

BASE PRICE	$210,738
VEHICLE LAYOUT	Front-engine, RWD, 2+2-pass, 2-door convertible
ENGINE	3.9L/591-hp/561-lb/ft twin-turbo DOHC 32-valve V-8
TRANSMISSION	7-speed twin-clutch auto
CURB WEIGHT	3,700 lb (mfr est)
WHEELBASE	105.1 in
L X W X H	180.6 x 76.3 x 51.9 in
0-60 MPH	3.4 sec (mfr est)
EPA CITY/HWY/COMB FUEL ECON	Not yet rated
ON SALE IN U.S.	Summer 2018

Words Angus MacKenzie

The Portofino alternative

Aston Martin's new DB11 Volante shares its AMG-sourced 503-hp 4.0-liter twin-turbo V-8 with the DB11 V8 Coupe launched last year. So too for the eight-speed automatic transmission, suspension, brakes, hood, front fenders, and doors, along with much of the underlying structure ahead of the windshield.

What's different? Apart from the obvious, the bone line along the new rear fender now runs 0.4 inch higher over the wheel opening than on the Coupe before curving gently downward toward the tail, and the top surface of the fender is more horizontal. Aston engineers also worked hard to ensure the cloth roof folded down into a stack just 10.2 inches tall.

As a result, the DB11 Volante is endowed with a low, languidly voluptuous profile few modern convertibles can match. And unlike many convertibles, it's achingly gorgeous even with the roof raised. The backlite is impressively fast for a soft-top, the roofline streaming back from the windshield header to the trunk in a single glorious arc.

The Volante weighs 242 pounds more than the V8 Coupe, or about as much as the V-12-equipped DB11. About 99 pounds of that increase is the result of strengthening the body structure to compensate for the lack of a roof. The rest is down to the eight-layer Webasto cloth roof and the power mechanism that allows it to be raised or lowered in 14 to 16 seconds at speeds of up to 30 mph.

The soft top and lighter V-8 engine mean the mass is distributed differently compared to the two coupes—the Volante's front-to-rear weight distribution is 47/53 percent, compared with the V12 Coupe's 51/49 percent and the V8 Coupe's 49/51 ratio. Front spring and stabilizer bar rates are the same as the V8 Coupe's, but the rear springs are 13 percent stiffer.

The extra mass does little to dull the performance: With a claimed 0–60 acceleration time of about 4.0 seconds and a top speed of 187 mph, the Volante is as quick as the V8 Coupe.

The Volante feels impressively plush, calm, and controlled even when hustled along narrow, winding mountain roads. It's more agile than the nose-heavy V12 Coupe, more measured than the V8 Coupe ... and more involving than Ferrari's Portofino, the Volante's direct rival in terms of price, presence, and performance of intended function.

RIVAL The gorgeous Aston Martin DB11 Volante is more involving to drive than the Ferrari Portofino.

With 88 more horses under the hood and an active torque-vectoring E-Diff, the Ferrari is unquestionably faster and sharper. But even with the shocks switched to Sport Plus mode, the Aston rides more fluidly and has more communicative steering.

With the roof down, side windows up, and wind blocker in place, the Volante's cockpit is comfortably snug. However, opening up that beautifully brogued leather interior to the elements means bright sunlight occasionally renders the TFT instrument panel unreadable.

The very first Aston Martin Volante, built in 1965, sold last year at auction for $1.7 million. It's safe to say a 2019 DB11 Volante won't be worth the equivalent in 50 years. But that's not the measure of this car. In terms of the here and now, its stunning good looks, sophisticated road manners, and everyday usability make it the most accomplished Volante that Aston Martin has ever built. ■

ROLE MODEL Aston Martin Aims To Be The New Ferrari

Aston Martin CEO Andy Palmer has been tasked with turning the iconic but oft-troubled brand into a viable modern luxury automaker ready for an IPO that will make its investors a lot of money. His road map? Ferrari.

Aston branding now appears on the Red Bull racers that compete with Ferrari in F1, the Valkyrie hypercar designed by Red Bull's Adrian Newey is a legitimate LaFerrari rival, and work has begun on a mid-engine supercar aimed at the Ferrari 488 GTB. Helping Palmer are key personnel who used to work for ... Ferrari. Chief technical officer Max Szwaj, chief powertrain engineer Joerg Ross, and chief vehicle dynamics engineer Simone Rizzuto are all ex-Maranello. As is Luca Marmorini, who will evaluate a potential Aston power unit for the 2021 F1 season.

Spun off from Fiat and listed on the NYSE, Ferrari has a market capitalization of about $24 billion. Impressive for a company that sells fewer than 10,000 cars a year. For context, GM, which sold nearly 10 million vehicles last year, has a market capitalization of about $58 billion.

However, exotic brands are not guaranteed success. From the early 1960s through 2005, Aston Martin never once posted a quarterly profit. The automaker has been in receivership seven times but never stopped operating.

If Palmer can convince the markets that his storied English brand is the next Ferrari, the upside is huge. **AM**

SPECS **2019 Aston Martin DB11 Volante: Base Price** $219,581 **Vehicle Layout** Front-engine, RWD, 2+2-pass, 2-door convertible **Engine** 4.0L/503-hp/513-lb/ft twin-turbo DOHC 32-valve V-8 **Transmission** 8-speed auto **Curb Weight** 4,150 lb (mfr) **Wheelbase** 110.4 in **L x W x H** 187.0 x 76.8 x 51.2 in **0-60 MPH** 4.0 sec (mfr est) **EPA City/Hwy/Comb Fuel Econ** Not yet rated **On Sale in U.S.** Currently

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THE HATCH IS BACK

Words Kim Reynolds

I was heading down a narrow, craggy lane outside of Cape Town, South Africa, when we approached a group of children walking along its dry, grassy edge. I slowed. They were maybe 10 or 11 years old, dressed in a palette of primary colors: yellow shirts, red or blue pants. I guess they'd just gotten out of school. Turning around, they glanced at us in the black-grilled, laser-headlighted, hulking electric-blue 2019 Audi A7 and instinctively spilled into our path, loping into a sort of spontaneous dance. "Jeez, I don't want to hit anybody," I murmured to my co-pilot, *Automobile*'s Rory Jurnecka, braking to inch through them.

Just like that, smiling faces filled the side windows as they patted the fenders while laughing and waving. "This looks like an Audi commercial," I joked to Rory. With a nervous foot covering the brake pedal, we were all waving; the exuberance was contagious. A while back, I relistened to Paul Simon's *Graceland*, and honestly, it seems like half this country is still swaying to Simon's soundtrack.

In Southern California, where I'm from (and until now thought was pretty laid back), you'd have to toss free iPhones out of the A7's windows to attract this sort of attention.

But 55-year-old men thumbing the corner of a $72,000 stack of bills are the epicenter of the A7 buyer demographic. They'll be lowering their copies of *The Wall Street Journal* at sun-drenched Starbucks tables from Malibu to Montauk when this thing flashes past.

Back in 2012, it was the original A7's long-arc,

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TAILORED TAIL
The second-gen A7's still-swoopy profile is finished in more pleated lines. Noggin clearance while accessing the rear doors is unexpectedly adequate.

four-door fastback silhouette that gained notice. That's blasé now. Six years later (actually, nearly seven when the 2019 A7 finally hits the U.S. dealers this fall), what'll attract attention are this four-door hatch's razorlike bodywork creases.

Creases? The A7's wardrobe seems to have been sent to the cleaners for heavy-starch pressing. The sun seems to paint its lines from almost any angle, and the trick to it finally occurs to you when you look closely and run your fingers back and forth over their surfaces. Many aren't simple edges; where the metal bends, it overshoots a tiny bit before spilling into the next panel. As you walk around the car, sunlight doesn't just briefly glint. It lingers there as you move. I wonder if those kids were feeling it, too.

Up front, the 2019 A7 is fat, melted-down, and techno-aggressive. It appears to be, well, completely pissed off. Small, black plastic bricks nestled into either side of the egg-crate grille house either radar or lidar (used for parking); the headlights are either baseline LEDs, matrix LEDs, or the as-pictured laser-based LEDs (which will require legislation to pass before for being legal in the U.S.). A passing A7 tells a quick, tweet-length story of emotions as it goes by: first that fearsome face, then a flowing profile like a gently tapering flag, then a quiet kiss goodbye from its thin, simple taillights. Tension built, tension resolved. Unlock the doors, and the front and rear lighting puts on a brief little show; tap the turn signal, and red light sweeps laterally across the rear bezels (though its coolest features are not yet legal in the U.S.).

Like all the rest of the bodywork's tight-fitting apertures, the hood is demarcated by pencil-line panel gaps. It's light to lift—aluminum, assisted by hydraulic struts. And behold, a 340-hp, 369-lb-ft 3.0-liter V-6, topped by an in-the-vee twin-scroll single turbo; it's the new A8's base engine, and here, it's the 2019 A7's singular choice. But it brings a twist to this engine bay: Cradled under its right cylinder bank is a belt-drive electric motor that elevates this to 48-volt mild-hybrid status. It doesn't add any propulsion but instead super-quick stop-start and brake regeneration to harvest otherwise wasted energy (cabled to a small lithium-ion battery beneath the cargo floor). This is a quiet, silky powertrain that's potent when you lean on it while paddle-shifting through its seven-speed dual-clutched gears, like snapping your fingers after eating buttered popcorn. Audi claims

0–62 mph in 5.3 seconds. Anecdotally, it feels at least that quick.

OK, so I'm going to now take off my hat, hold it over my heart, and publicly point out one problem to Audi's product planners. Step around next to the front wheel—see how the bulk of it is ahead of the front axle line? It's a hallmark of Audi drivetrains, and basically it makes them arrows with very heavy arrowheads, hesitant to turn in at the limit. When I drive the figure-eight test with these cars, I deliberately brake in a straight line, fully compress the front suspension so the nose is sniffing the asphalt, and then all at once pop off the brake pedal and turn in to maximize its brief wormhole access to front-end bite. Neglect to perform this task, and ... it's a one-way ticket to Understeerland.

Anyway, back here—as we walk past the all-new platform (which will reappear on the next A6, pg. 78) and its standard AWD (sans a torque-vectoring rear axle)—is The Solution. Every car in our Cape Town fleet was fitted with active rear-steer operated by an electric motor manipulating rear toe links. Bewilderingly, Audi hasn't decided whether it'll be available on the U.S. A7s. Memo to Audi product planners: Put this setup on everything, because it's transformative.

At lower speeds, with the front and rear wheel angles in opposite phase, the car's

turning circle noticeably contracts. At higher speeds, they same-steer for better stability, and they can creatively intervene if the car gets out of shape. Abetted by the variable-ratio steering, the car's bite into corners seems hungrier, yet its stepped-up pace on Cape Town's rough roads was generally well-concealed by the busy air springs and adaptive shocks.

Unlike in the new A8, the hatch's rears springs and shocks are separated to widen the cargo floor (which expands forward at the same level when the rear seat back is folded). Note to tall passengers: Even after several quick scrambles in and out of the back seat, the hat atop my 6-foot-1 frame never so much as brushed the sloping door opening.

Inside, there's enough rear legroom to launch an annoying kick into the front seat back (except, of course, for the unfortunate tunnel straddler in the middle). Ditto sufficient headroom, aft and up front—which is where you confront, in my opinion, the new A7's single most significant thing—its two-tier MMI touchscreens.

Remember when driving a German sedan meant always reaching your right hand down and spinning a big rotary knob (and usually experiencing bewilderment at what it's doing)? As with the A8 (and presumably the new A6), Audi's Virtual Cockpit is matched by two center-stack displays—the upper one for infotainment, navigation, and such and the lower one for climate control and other sundry functions. Both are haptic (with adjustable sensitivity) with audio confirmations, the lower one being particularly easy to interface with a finger because your wrist rests on the shifter.

You have to give Audi credit for what it's done here. The lower screen's search by cursive text recognition is great (again, that steadied right wrist is crucial); its natural-language voice recognition is sourced by both onboard and cloud-based computing. There's an easy-to-assign row of shortcut icons and even customization by holding an icon then

placing it—a behavior we've learned from smartphones. All that's great, but I need more time in my time zone with less jetlag and more cappuccinos before passing too much judgment. But.

On our first day in Cape Town, Rory and I set out on the nav-guided loop only to be halted by a closed road (due to high wind; who's ever heard of that?). We had to turn around. But after much tapping and finger-writing and dialoging with the voice recognition (all of which were stymied by the local connectivity issues), I got flustered and started to set up CarPlay instead. Then an Audi helper came to our rescue, reached in, and tapped the way back to the hotel. OK, so we're unfamiliar with the system. But.

Being jet-lagged, geographically unfamiliar, and connectivity-challenged is

The sun seems to paint its lines from almost any angle. It doesn't just briefly glint. It lingers there as you move.

NO ROTARY KNOB The new lower interface (multitouch and haptic) is easy to operate by resting your wrist on the shifter's top (far right). Audi's recent 3.0-liter V-6 (already seen in the A8) adds a 48-volt system (start-stop and brake energy recovery) for its A7 duty.

exactly the situation these things should be designed to navigate. Then there's the user interface: Why are the icons dark and monotone and sometimes overdesigned to the point of being unidentifiable? There seems to be a compulsion to match the style standard of the fashionable car it's attached to rather than just being the easiest interface to use. But.

You can have both. The Cape Town hotel Audi stashed us in was the Radisson Red. It's close to the swank marina and is trendy and uber-cool inside—a conscious pick to complement the fashionable A7. On my departure day, I went down for breakfast and was startled by the server's grin, asking, "How'd you sleep last night? Rested? So, my friend, what would you like for breakfast?" I blanched. Then smiled. Design and smile-making communication, intertwined.

Maybe all interface engineers should spend some time in chic yet friendly Cape Town hotels. They'd learn something. ■

2019 Audi A7

BASE PRICE	$72,000 (est)
VEHICLE LAYOUT	Front-engine, AWD, 5-pass, 4-door hatchback
ENGINE	3.0L/340-hp/369-lb-ft turbocharged DOHC 24-valve V-6
TRANSMISSION	7-speed twin-clutch auto
CURB WEIGHT	4,000 lb (mfr)
WHEELBASE	115.2 in
L X W X H	195.6 x 75.1 x 56.0 in
0-62 MPH	5.3 sec (mfr est)
EPA CITY/HWY/COMB FUEL ECON	Not yet rated
ON SALE IN U.S.	Fall 2018

Words Scott Evans

The Same but Different

Stop us if this sounds familiar. But in case you missed the news on the A8 and A7, here's the rundown of the latest A6.

As you've already guessed, the least expensive of Audi's medium and large sedan triumvirate again borrows heavily from the long-tail A7 and coddling A8 luxury sedans. At the front, it's identical to the A7 and mostly the same from the side, save the roofline. The rear end is the A6's calling card, clearly related to the other two but uniquely executed.

The interior is, like the nose, identical to its near-twin, the A7. Its showpiece is the latest MMI system featuring a 10.1-inch infotainment touchscreen at the top of the dash and an 8.6-inch touchscreen with haptic feedback below to control the climate and accept text inputs drawn with a finger. A fully loaded car with both the optional 10.1-inch screen and navigation also includes the 12.3-inch Virtual Cockpit gauges and a full-color head-up display.

Driving-related tech features include everything from active safety systems to driver aides such as adaptive cruise control with lane keeping assistance and Audi's Parking Pilot/Garage Pilot, which allow you to pull the car into or out of a garage or parking space from outside the car with an app on your phone. Sadly, the A8's Level 3 autonomous technology does not trickle down to the A6.

The theme continues unabated beneath the hood, where again like the A7, the only likely engine for the U.S. market is a 3.0-liter turbocharged V-6 with a 48-volt belt alternator starter mild-hybrid system. Adding an electric motor/generator to the serpentine belt allows for quicker, smoother automatic engine start/stop as well as regenerative braking and the ability to coast with the engine off between 34 and 99 mph. When auto-stopped, which can happen when the car drops below 14 mph coasting to a stop, the engine automatically restarts when the car ahead moves.

That engine is connected to a seven-speed dual-clutch automatic transmission and a variant of Audi's Quattro all-wheel drive, which decouples the rear axle when not needed to save gas. A rear-wheel steering system is optional and improves both agility and the turning radius.

The wheels are corralled by independent suspension all around with one of four spring and shock combinations: springs and fixed dampers, springs and electronically adjustable dampers, air suspension and electronically adjustable dampers, and a sport suspension with stiffer springs and fixed dampers.

Slightly larger on the outside, noticeably larger on the inside, and fully revamped, the Audi A6 will go on sale in Europe in June with U.S. sales likely to follow by the end of the year. ■

SIMILAR FOR LESS If you're feeling thrifty or don't want a hatchback, the A6 will get you all of the A7's features for less money.

SPECS **2019 Audi A6 Base Price** $49,000 (est) **Vehicle Layout** Front-engine, FWD/AWD, 5-pass, 4-door sedan
Engine 3.0L/340-hp/369-lb-ft turbocharged DOHC 24-valve V-6 **Transmission** 7-speed twin-clutch auto **Curb Weight** 4,000 lb (mfr)
Wheelbase 114.7 in (est) **L x W x H** 194.5 x 74.3 x 57.4 in **0-60 MPH** 5.3 sec (*MT* est) **EPA City/Hwy/Comb Fuel Econ** Not yet rated **On Sale in U.S.** Winter 2018

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G8 HUK

HOMEWARD BOUND IN THE HONDA CIVIC TYPE R

Words Angus MacKenzie **Photographs** Matt Howell

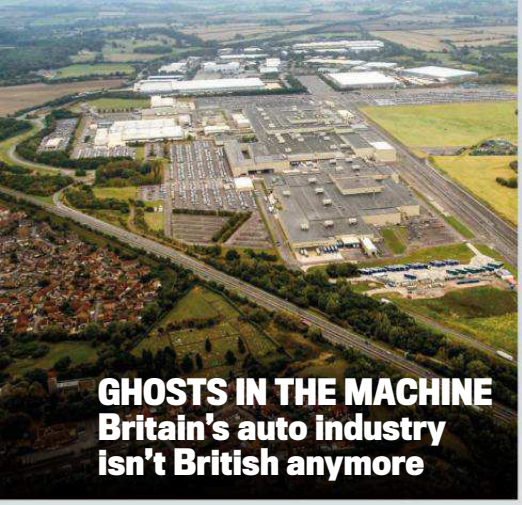
The road jinks and heaves over the rolling hills, a gray ribbon carelessly tossed upon a rumpled green-brown sward. Grazing sheep bow their heads in the bracing wind. God rays stream through occasional breaks in the ominous cloud cover. Rain threatens. We're deep in hot hatch country, in one of the best hot hatches in the world—the 2018 Honda Civic Type R.

We've made no secret of our love for this car, especially now that Honda finally made it available for sale in America. From a 2.0-liter turbo-four, 306 hp and 295 lb-ft of torque rush forth. Sixty mph arrives in just over five seconds, and it carries a top speed of almost 170 mph. Its Nürburgring Nordschleife lap time makes older Porsche 911s look ... slow.

This little Gundam hot hatch—with its preposterous array of wings and vents, edges and angles—is perhaps the most impressive, most well-rounded high-performance Honda since the original NSX. And it costs about as much as a loaded Accord.

We've taken the long way 'round en route to the birthplace of the Civic Type R, just for the sheer hell of it, to let that mighty little engine off the leash, to delight in the *snickety-snick* gearshift and the crisp, tactile steering, to play with a

DRIVER'S DELIGHT Challenging Welsh roads showcase the Honda Civic Type R's potent engine, lightning-quick gearshift, and superbly composed chassis.



REPURPOSED Honda's Swindon plant is on the site of the Vickers Supermarine factory that built Spitfire fighter planes during World War II.

GHOSTS IN THE MACHINE
Britain's auto industry isn't British anymore

Situated just down the road from Honda's U.K. factory, BMW's Mini Plant Swindon is where 90 percent of the Mini's body-in-white components and 80 percent of its subassemblies (hoods, tailgates, and doors) are made. It's also a poignant reminder Britain once had its own auto industry.

Built in 1955, Mini Plant Swindon was owned by British Leyland in the late 1960s, when BL was Britain's domestic auto industry. BL made millions of vehicles wearing an Austin, Morris, Jaguar, Rover, Land Rover, Triumph, or MG badge, as well as others lost to the rust of time. Some of these vehicles were interesting, even groundbreaking, in terms of concept and design, yet all were shoddily built in ancient, inefficient factories.

Hobbled by incompetent management and intransigent unions, BL was on life support by the late '70s, dependent on government subsidies for survival. Prime Minister Margaret Thatcher's ruthless remaking of the British economy in the '80s changed everything, however. Glamorous Jaguar was spun off and listed on the London Stock Exchange in 1984, with Ford buying it six years later for $2.3 billion. The rest of BL was renamed Rover Group and sold to aircraft and defense systems manufacturer British Aerospace in 1988, which flipped it to BMW in 1994.

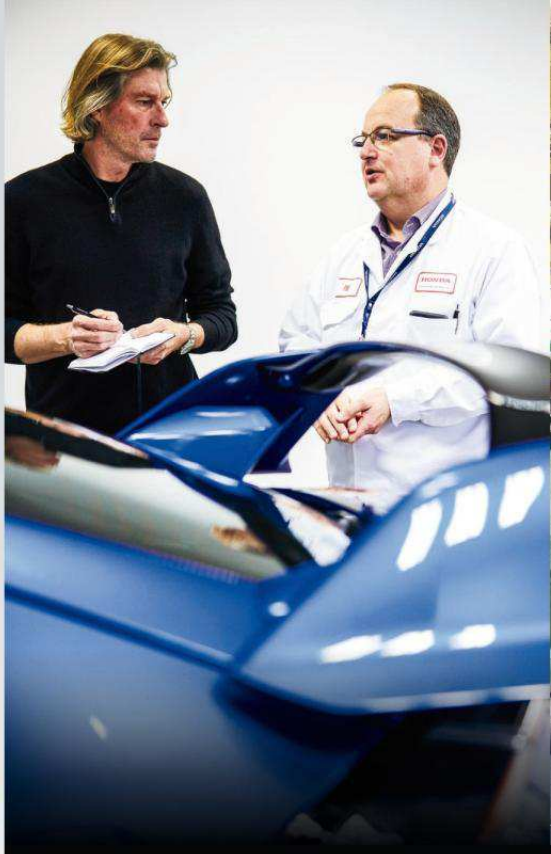
BMW boss Bernd Pischetsrieder, an Anglophile car enthusiast, dreamed of rehabilitating Rover, Mini, and MG, pushing Range Rover further upmarket (he had BMW V-12-powered Range Rover prototypes tooling around Munich), and even bringing back the Riley and Austin-Healey brands. But by 2000 Pischetsrieder had been booted from the top job in Munich. The BMW board, panicked by the massive investments in new products and factory upgrades Rover Group needed to be profitable, wanted out.

Successful Mini became a BMW division. Valuable Land Rover and Range Rover were sold to Ford for $2.9 billion. The rest was offloaded to a consortium of four British businessmen for less than 20 bucks, which spoke volumes about the perceived health of the business. As part of the deal, BMW also loaned the consortium, Phoenix Venture Holdings, about $640 million—interest free—to help keep the newly branded MG Rover Group afloat. It was Munich's least bad option: If MG Rover went under, BMW wouldn't be on the hook for any more money.

MG Rover collapsed in 2005 with debts of about $2.4 billion, throwing 5,300 employees out of work. But not before the so-called Phoenix Four executives reportedly pocketed an estimated $73 million between them. It was a scandalously sad end to Britain's domestic auto industry.

Of the old British Leyland brands, Jaguar, Land Rover, and Rover are now owned by India's Tata; BMW owns Mini, Riley, and Triumph; Austin, Morris, MG, and Austin-Healey are owned by Chinese automaker SAIC; and China's Nanjing Automobile Corporation owns BMC, Princess, Vanden Plas, and Wolseley.

Angus MacKenzie



IN CHARGE Honda U.K. manufacturing boss Phil Haydon, who oversees the Swindon plant's operations, commutes to work in a Type R and parks it next to his own S2000 at home each night.

Chances are you've never heard of Swindon. It's where the legendary Spitfire fighter plane was built during WWII. And it's where every new Civic Type R is made.

chassis with grip and poise and purpose equaled by few performance cars built on quotidian underpinnings. We're in Wales, home of some of Britain's best driving roads, and our drive isn't going to take as long as you might think. We're not headed for Japan but rather the town of Swindon, 90 miles east of here, just across the border in England. It's where every new Civic Type R in the world is made.

Unless you're a Brit (or a fan of post-punk art-pop band XTC), chances are you've never heard of Swindon. Situated 80 miles west of central London, it traces its beginnings back more than a thousand years to the time of the Anglo-Saxons. The Industrial Revolution transformed the town in the 1800s, bringing canals and the railways. In 1841, Isambard Kingdom Brunel, Victorian Britain's most celebrated engineer, established a

WORLD PARTY Every Honda Civic hatch sold around the world is made in Swindon (and each Type R's engine in Ohio). A new one rolls off the line every 69 seconds.

workshop in Swindon to repair and maintain locomotives for the Great Western Railway. Thus began the town's association with manufacturing.

Trains, planes, and automobiles have all been made in Swindon. Today, though, it's only automobiles: The last steam engine built in Britain, the Evening Star, rolled out of Swindon Works in 1960, and the sprawling Honda of the UK Manufacturing plant on the northeastern outskirts of the town is built on the site of the old Vickers Supermarine factory that made the legendary Spitfire fighter plane during World War II.

The late 20th century wasn't especially kind to Swindon. What's left of the old town is surrounded by a suburban sprawl dotted with big-box stores and identikit industrial parks. We cruise the Type R through town to the Honda plant, negotiating Swindon's famous Magic Roundabout, a giant two-way traffic circle ringed by five smaller traffic circles. Even the Brits, who can barely drive a mile without encountering a traffic circle, are a little flummoxed by this one; Lord knows the chaos it would cause in Los Angeles.

Honda began selling Civics in Britain in 1972, and to get around restrictions on Japanese imports, Honda formed a joint venture with British Leyland in 1980. The mid-'80s Rover 200 and 800 models used a lot of Civic and Acura Legend hardware; the 1993 Rover 600 was basically a reskinned Accord. Honda's decision to establish a factory to build its own cars in Swindon was a direct result of its links with British Leyland: A stamping plant that made body panels for BL had been in the town since 1955. (Now owned by BMW, it makes panels for Minis.)

The first British-built Honda, an Accord, rolled off the Swindon line in 1992. Today, the factory sprawls across 370 acres, employs 4,000, and is Honda's global production hub for five-door hatchback versions of the 10th-generation Civic. Every single five-door Civic hatchback sold around the world is made right here—one every 69 seconds. And because the current-gen Civic Type R, code-named FK8, is based on a five-door Civic hatch, it's made here, too.

A Type R starts life like every other Civic five-door—a collection of steel

WESTWARD Just taken delivery of your new Type R? It could have been one of this lot ready for shipping to the U.S.

TYPE R APPROVED Swindon is no stranger to Honda's hottest Civics

The FK8 is the fourth Honda Civic Type R built in Honda's U.K. factory. Here's a quick look at the other three.

Code name: EP3
Manufactured: 2001–2005
Total built: 4,490

Swindon produced two versions of the EP3, the second Civic Type R: one for the European market and one for the Japanese market, both based on the seventh-generation Civic three-door hatchback. The European version was the softer of the two, with a 197-hp variant of the 2.0-liter VTEC four under the hood, a close-ratio six-speed transmission, and uprated brakes. The faster, more focused JDM model got a special 212-hp engine built in Japan, as well as a helical limited-slip differential, sharper suspension settings, and red Recaro seats.

Code name: FN2
Manufactured: 2012–2015
Total built: 2,985

Japan and Europe went quite different ways when it came to the third-gen Civic Type R. JDM versions (FD2) were based on the eighth-generation four-door Civic sedan and built in Japan, but European models were based on the Civic three-door hatch built in Swindon. As such, the FN2 shared platform elements with the Honda Fit, including the underseat fuel tank, and a torsion-beam rear axle instead of the more complex multilink rear end used on the FD2. And although the JDM Type R boasted a new engine with 222 hp, the FN2 carried over the previous car's 197-hp powerplant.

Code name: FK2
Manufactured: 2015–2017
Total built: 15,978

Based on the ninth-generation Civic five-door, the FK2 was a more serious car than previous Swindon-built Type Rs. With this car, Japan didn't get to hog the good stuff. Built in a single spec for the world, which boosted production numbers significantly over the previous two Swindon-built Type Rs, the FK2 got the 306-hp K20C1 (the same engine that powers the new FK8) built in Anna, Ohio, along with the all-important helical limited-slip differential. As with the FN2, the rear axle was a torsion-beam unit—adoption of a multilink rear suspension was one of the key changes made with FK8.

FAMILY TREE The new FK8 model is the fastest, most sophisticated Civic Type R yet built at Swindon.

stampings to be stitched together on the Assembly Frame line. To improve body rigidity, Type R bodies get an extra helping of structural adhesive as well as short-pitch welds—spot welds placed 0.8 inch apart instead of the 1.6 inches used on regular Civics. Then the body-in-white rolls through the paint shop to get sprayed one of six colors before it is lowered onto a 1,300-foot-long, 120-station final assembly line. (U.S. Type R buyers can only choose from five colors; Sonic Gray Pearl, a slightly livelier take on Audi's iconic Nardo Gray, is not offered. Pity, because it looks cool.)

Type Rs are typically built in batches of 75 and are treated no differently than any other Civic going down the line, says Phil Haydon, Honda's manufacturing operations boss. With cars exported to 90 countries, in left- and right-hand drive and different powertrain configurations, Swindon builds about 500 unique versions of the five-door hatch. Keeping all the Civic variant builds to small batches means everyone on the assembly line gets a crack at building a Type R, and not just because it's good for morale.

Production is all about rhythm, Haydon says. Muscle memory is important. "If

STOCK TYPE R NOT ENOUGH? HERE'S THE FIRST BATCH OF GO-FAST AFTERMARKET PARTS

Words
Aaron Bonk,
Alex Nishimoto,
Matthew Rodriguez
Photographs
Aaron Bonk, Jofel Tolosa

R WE THERE YET?

Let's face it: Less than 1 percent of us are ever going to blast around the Nürburgring; fewer still will come within an arm's reach of the Civic Type R's record-setting lap time.

Still, we autocross junkies and wannabe street racers must plead guilty to wanting to slap that little extra *zhoosh* onto our rides.

Honda's golden child is ridiculously capable even in stock form. After all, it was a *Motor Trend* Car of the Year finalist. But the aftermarket is starting to produce a trickle of parts from folks who think they can do the tiger from Tochigi one better. Our colleagues at *Super Street* checked out the latest offerings.

Borla Cat-Back ATAK Exhaust

American exhaust maker Borla might not be the first name you think of when seeking a Honda fart can, but maybe it ought to be. The impending system retains the Type R's three-outlet design out back and integrates carbon-fiber exhaust tips, T-304 stainless steel tubing from head to toe, and precision-machined brackets that tie the exhaust up to the chassis in a beautiful sort of way. Borla's latest system features its Polyphonic Harmonizer, which works similarly to a pipe organ to create the perfect sonic tone for each application. Check out Frank Markus' Technologue column from the February issue for the deets. *borla.com*

SPEC Clutch Assembly

Like any high-performance production car, the Civic Type R's clutch makes a compromise between track-day flogging and everyday ease of use. SPEC thinks it's struck an even better compromise—one that errs more toward the side of track days. The range spans from carbon-kevlar-based organic discs to high-clamping-capable discs made of semi-metallic materials. *specclutch.com*

Eibach Pro-Plus Anti-Roll Bars and Lowering Springs

It won't take Type R buyers long to decide to drop that ride height, and when they do, Eibach will be there. Its new Pro-Plus lowering springs reduce body roll, squat, and nose-diving and drop the center of gravity by 0.8 inch. Eibach claims its anti-roll bars eliminate those brief moments of understeer, reduce weight transfer, and fine-tune the Honda's handling. *eibach.com*

Seibon Aero

Carbon-fiber parts producer Seibon will make the already over-the-top Civic Type R even more outrageous: front and rear spoilers, hood, and side skirts, all hand-crafted carbon fiber and with that finished gloss coat you expect. *seiboncarbon.com*

aFe Power Intake and Exhaust

Takeda—a division of aFe—introduces its Momentum cold-air intake system, which works with the Type R's existing air scoop but delivers more volume. Its Bladerunner intercooler pipes increase airflow by way of smoother bends, and its Takeda exhaust system can add a healthy boost of horsepower, as well. The all–stainless steel cat-back system comes with a pair of polished mufflers and three carbon-fiber tips. *afepower.com*

Ferrea Valvetrain

Ferrea found the limits of the valve springs and retainers in the Type R and is doing something about it. The high-end valvetrain manufacturer introduced an assortment of stainless steel valves, stiffer valve springs, copper-bronze valve guides, Viton valve seals, and a CNC-machined and lighter-weight roller rocker assembly, all for Honda's latest K20C1. *ferrea.com*

HPD Type R Crate Engine

Honda Performance Development will sell you a Type R crate engine. The 2.0-liter turbo makes 306 hp at 6,500 rpm and 295 lb-ft of torque from 2,500 to 4,500 rpm. It'll run you $6,519.87 plus shipping. That's a lot of cash, but it's far less than a $21,725 Dodge Hellcat crate motor. *hpd.honda.com/*

... Or you could let Evasive Motorsports do it for you.

Evasive starts with a carbon-fiber front spoiler, splitter, grille, hood vents, side skirts, side vents, GT mirrors, backing plates, rear diffuser, and wing. Then come staggered 18-inch Advan GTs wrapped in Maxxis VR-1 stickies. A set of Eibach Pro Kit springs help eliminate any gap caused by the 2.0-inch reduction in rolling stock. An Eibach rear camber kit, adjustable rear anti-roll bar, and EVS Tuning prototype front camber plates help dial in the suspension. The only real engine upgrades are a GReddy prototype exhaust, an intercooler upgrade, and an oil cooler kit. Recaro Pole Position seats provide increased holding power and reduce weight. Add in an EVS Tuning four-point rollbar and harness bar, rear seat delete, and a titanium teardrop shift knob, and you are on your way. *evasivemotorsports.com*

PRIDE Honda's Phil Haydon says everyone on the line at Swindon gets the chance to build a Type R.

you've got that rhythm, quality comes naturally." But Honda's hottest Civic unquestionably gets a little extra TLC. "There's pride in building a Type R," says Haydon, who drives one to the office and parks it next to his S2000 roadster at home each night. "There are a lot of petrolheads working here. They love cars, and they love being around the Type R."

It takes 14 hours to assemble a Type R—two hours in the weld shop, 10 hours in the paint shop, and two hours on the final assembly line. Quality control signoff includes a short test drive on a track built on an old runway that once reverberated with the growl of the Spitfire's mighty Rolls-Royce Merlin V-12 engine. Then it's over to the dispatch yard, ready for shipment. Swindon has manufactured about 12,000 FK8 Type Rs so far, and a third of them have been shipped to the U.S., already the single biggest market for the new generation.

The extraordinary thing about Type R production at Swindon is how hands-off the Japanese are in the process and how uncomplicated it all is. Apart from a few specialist components such as the Brembo brakes, most of the car's bits and pieces come from Honda's existing supplier base, near and far. The seats, for example, are made just 5 miles away by a company called TS Tech. And that wonderful engine? Code-named AP4T, it's made in the good old U S of A, at Honda's engine plant in Anna, Ohio, and shipped to England.

That's right. There's a big piece of American pride at the heart of every Japanese-designed, British-built Honda Civic Type R. This car's home is the global village. ■

Words Stefan Ogbac Photographs Darren Martin

The Balanced Hot Hatch

As one of the original hot hatches, the Volkswagen Golf GTI combines practicality and excellent driving dynamics. For 2018, the entire Golf lineup gets a significant refresh, and the spunky GTI gets a much-needed infusion of tech. Sadly, we don't get the power increase found in Euro-spec GTIs, nor does it get the Digital Cockpit option. Does that mean our GTI is less fun? Oh gosh, no.

The 2.0-liter turbo-four carries over with 220 hp and 258 lb-ft of torque and comes paired to a six-speed manual or six-speed dual-clutch auto. At the track, the manual-equipped GTI was the slower of our two testers, but both are six-second 0–60 cars. Save the manuals, indeed.

Road test editor Chris Walton liked that the dual-clutch shifted smoothly; in manual mode, auto upshifts happen at redline. The SE and Autobahn packages (like ours) include a limited-slip differential to help put the power down efficiently. But tricking the safety nannies is necessary to get a solid acceleration run from the stick shift. That said, there's no reason to rev the GTI near redline; there's not much grunt up there.

Braking performance was inconsistent due to both GTIs wearing all-season Pirelli Cinturato P7 rubber. Walton noted that both GTIs had a firm pedal with good bite; however, the all-season tires squealed too much, and the rear end had a tendency to get light.

On the canyon roads around Los Angeles, the GTI displayed agile handling and playful steering, but it was slightly numb at times. The GTI feels most at home on high-speed sweepers, though the stock Pirellis allow the chassis to overwhelm the tires.

But we live and die by our commutes. Despite the performance-minded suspension setup, the car's ride is comfortable even in its most aggressive setting. It dispatches bumps easily and keeps road imperfections out of the passenger cabin even with the standard 18-inch alloy wheels.

The standard six-speed manual offers smooth, precise throws and clearly defined gates. The clutch is friendly, and it's easy to find where it catches. If you are fed up with rowing the gears in slow-and-go traffic, the dual-clutch automatic has lightning-quick shifts, though there's a delay between stomping the accelerator and the transmission reacting—especially from a standstill.

Being a hatch, the GTI is like a crossover in disguise. There's a two-level load floor in the cargo area, and the standard 60/40 split-folding rear seats (with ski pass-through) provide almost as much cargo space as the last-gen Tiguan.

So what's new? Volkswagen's redesigned infotainment system, which features user-friendly interfaces, quick responses, clear graphics, and a logical layout. However, the use of touch-sensitive buttons forces you to take your eyes off the road. Luckily, the voice command system is intuitive when programming music, making phone calls, and asking for navigation. Apple CarPlay or Android Auto integration is a snap. One shortcoming: only one USB port.

Stripped-down base models seem budget-friendly, but options quickly drive up the price. It doesn't cost much more to get a decently equipped Subaru WRX STI or VW's own Golf R. Perhaps most telling, the Civic Type R is less expensive—provided you can find a dealer willing to sell it to you at sticker price. ■

SPECS 2018 Volkswagen Golf GTI Base Price 6M: $27,265 • DSG: $28,365 **Price As Tested** 6M: $35,920 • DSG: $37,020 **Vehicle Layout** Front-engine, FWD, 5-pass, 4-door hatchback **Engine** 2.0L/220-hp/258-lb-ft turbo DOHC 16-valve I-4 **Transmission** 6M: 6-speed manual • DSG: 6-speed twin-clutch auto **Curb Weight (F/R dist)** 6M: 3,197 lb (60/40%) • DSG: 3,261 lb (61/39%) **Wheelbase** 103.6 in **L x W x H** 168.0 x 70.8 x 57.8 in **0-60 MPH** 6M: 6.2 sec DSG: 6.0 sec **Quarter Mile** 6M: 14.7 sec @ 98.6 mph • DSG: 14.5 sec @ 98.4 mph **Braking, 60-0 MPH** 6M: 124 ft • DSG: 129 ft **Lateral Acceleration** 6M: 0.90 g (avg) DSG: 0.91 g (avg) ***MT* Figure Eight** 6M: 26.0 sec @ 0.70 g (avg) • DSG: 26.1 sec @ 0.69 g (avg) **Real MPG, City/Hwy/Comb** 6M: 29.3/40.1/33.4 mpg DSG: 23.7/34.0/27.4 mpg **EPA City/Hwy/Comb Fuel Econ** 6M: 25/33/28 mpg • DSG: 24/32/27 mpg **Energy Cons, City/Hwy** 6M: 135/102 kW-hrs/100 miles DSG: 140/105 kW-hrs/100 miles **CO2 Emissions, Comb** 6M: 0.69 lb/mile • DSG: 0.72 lb/mile

GOLD RUSH

A low, leaden sky shrouds distant office blocks, and wintry rain threatens to escalate into snow. We're standing outside a nondescript building in a nondescript industrial park in East London, looking at three Porsche Panamera Sport Turismos parked in a small compound. There's military-spec fencing all around, and strategically placed cameras stare balefully back at us. Police motorcycle outriders are parked in formation at the end of the street.

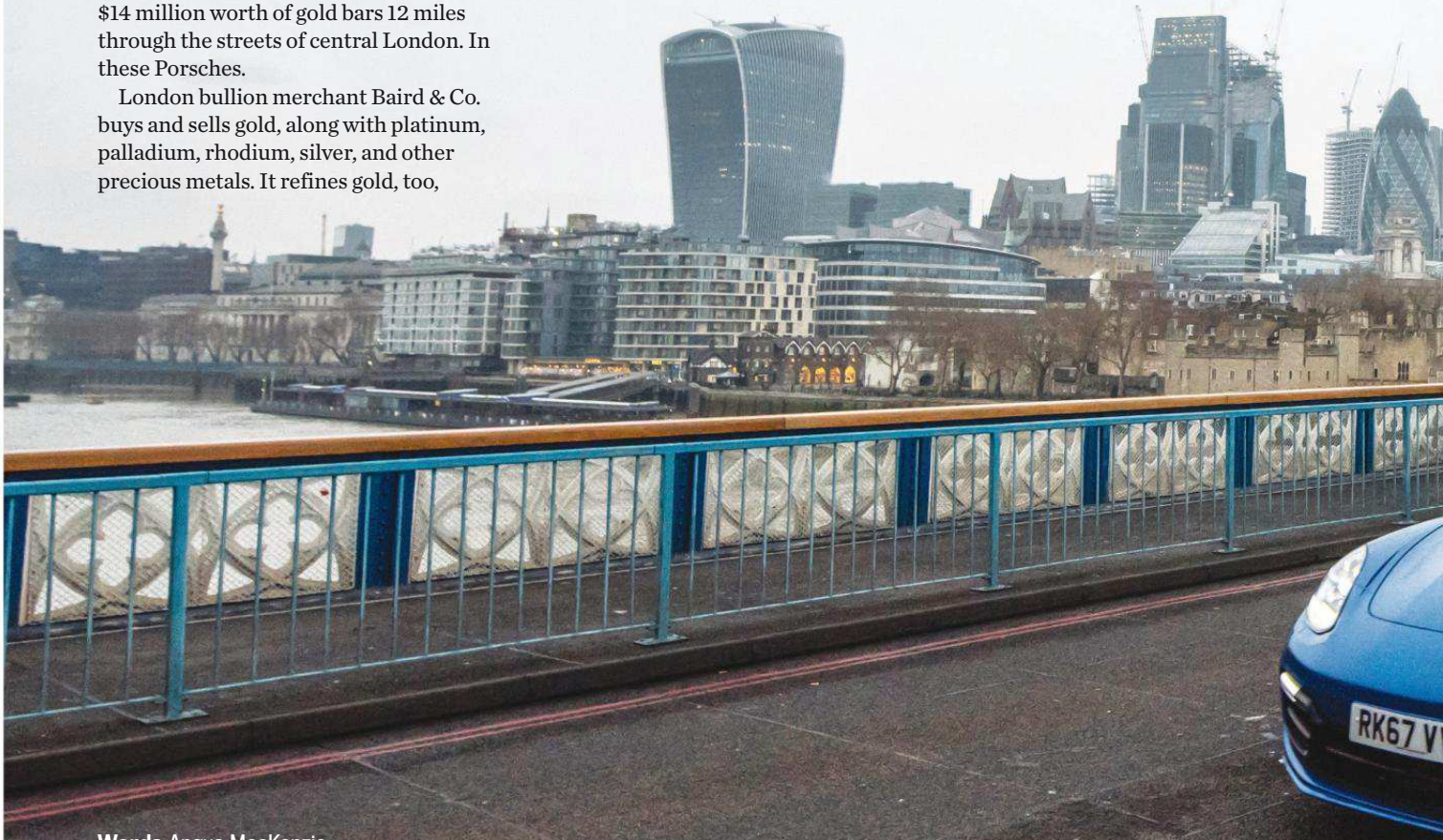
The security here is real—and for good reason. We are all about to transport $14 million worth of gold bars 12 miles through the streets of central London. In these Porsches.

London bullion merchant Baird & Co. buys and sells gold, along with platinum, palladium, rhodium, silver, and other precious metals. It refines gold, too, turning hundreds of millions of dollars of the precious metal into 99.99 percent pure "market bars." Market bars are a standard size that's used for serious gold traders and investors. About 10 inches long, 3 inches wide, and an inch and a half deep, each glittering brick weighs just over 27.5 pounds and is worth about $580,000. There are eight of them packed neatly in two sealed wooden crates in each Sport Turismo.

That's $4.6 million worth of junk in each Porsche's trunk.

OK, transporting 24 gold market bars across London in a convoy of shiny new Panamera Sport Turismos is a bit of a stunt: Baird & Co. has just opened a new vault in Hatton Garden—the heart of London's gold and diamond trade since the 1800s—and we're making the first bullion delivery to it from the company's gold refinery. But Sgt. Mark Blake, the London Metropolitan Police officer heading the motorcycle outrider squad, is deadly serious during the briefing: "Keep it tight," he says of convoy discipline. "And if we go, you all go."

We're also advised to not attempt to defend the cargo in the event of an attack. "That's what insurance is for," convoy



Words Angus MacKenzie

TRANSPORTING $14 MILLION WORTH OF BULLION THROUGH LONDON. IN PORSCHES.

GOLDEN GRINS Angus MacKenzie and Motor Trend OnDemand host Jethro Bovingdon heft more than a million bucks worth of precious metal between them. Out of shot: watchful security guards ensuring they don't make a dash for the door.

organizer Ben Samuelson says cheerily, to nervous laughs among the drivers. Blake doesn't smile.

I'm sharing one of the Porsches with *Head 2 Head* and *Ignition* co-host Jethro Bovingdon, who's along for the ride on behalf of our sister publication, *Automobile*. Having attended the launch of the Panamera Turbo S E-Hybrid Sport Turismo in Spain last year, I've already had plenty of miles in Porsche's upscale wagon-type thingy. Jethro has yet to drive one, however, so I offer him the wheel. I'll ride shotgun, radio in hand, watching for bad guys.

Actually, that's not true: Sitting behind me is a polite man from the Brinks armored car company who we'll just call ... the man from Brinks. He'll be watching for bad guys. I don't feel the need to ask

Bad guys bent on a bullion heist wouldn't be looking for a trio of Porsche Panameras. Would they?

STEALTH Just three Porsche Panameras crossing London's Tower Bridge with $14 million.

the man from Brinks if he's carrying a gun, though, because I figure we're hiding in plain sight. Bad guys bent on a bullion heist would be looking for a convoy of lumbering armored cars, not a trio of Porsches. Wouldn't they?

It's a Sunday morning, so traffic is light by London standards. We head west, the broad reach of the River Thames to our left as we dash through London's Docklands district. Cars dive-bombing you through traffic circles? Motorcycles sneaking up the blind side? Late braking to avoid running a red light? Such things don't exist inside the convoy cordon, as the police outriders scoot around us, blue lights flashing, to block junctions, shoo off interlopers, and prevent choke points, all to keep the convoy rolling. This is how heads of state commute. You could get used to it.

A city 2,000 years in the making, London is a mass of contrasts and contradictions, constantly reinventing itself. We cross the Thames at Tower Bridge. The Tower of London marks the eastern edge of what was Roman-ruled London more than a millennium ago. Beyond it reside the stacks of glittering steel and glass 21st century skyscrapers. We head west along the south bank of the river, working our way through a maze of what were once some of London's dirtiest, most dangerous streets but are now packed with trendy bars and restaurants and markets.

Our original plan was to cross back to the north side of the Thames at Blackfriars Bridge to bring us quickly and easily to Hatton Garden and Baird & Co.'s new vault. But Tom Cruise is using it. Well, the people filming Cruise's latest *Mission: Impossible* movie are using it. Improvisation is key in the security business, so we head farther west to cross Waterloo Bridge before cutting back east past the looming presence of St. Paul's Cathedral and jinking north.

We roll down Hatton Garden, past dozens of glittering jewelry shops and through a security cordon before stopping

right outside Baird & Co.'s front door. (What, no secret passage?) Shrugging off the anti-climax, Jethro pops the hatch, and our precious cargo is quickly unloaded and taken inside. Job done.

We already knew the lavishly equipped, beautifully finished Panamera Sport Turismo is fast and comfortable. Now we can tell you, with absolute authority, that the air suspension effortlessly copes with a 220-pound load in the trunk. And it only took a small fortune to find out. ■

CONVOY Who needs armored cars for a bullion run when you can have Porsche Panameras? And a police escort.

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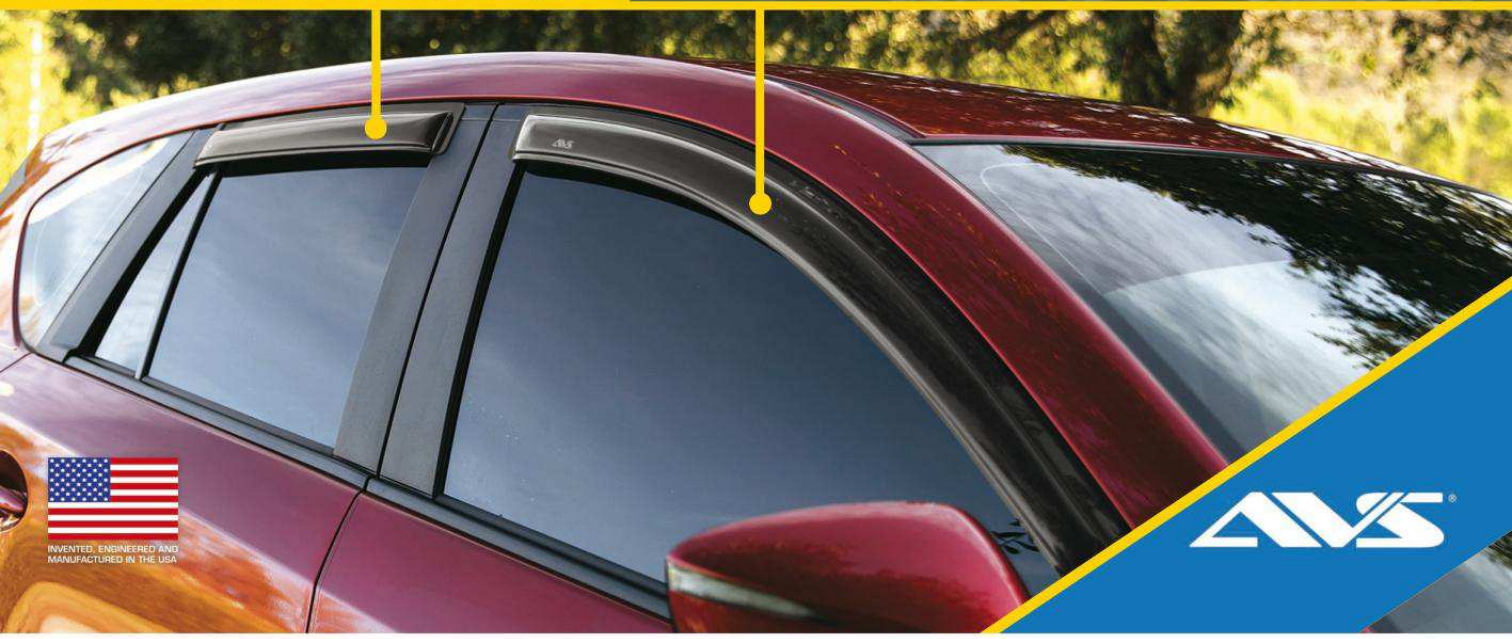

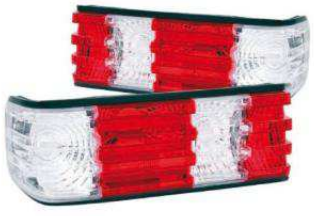

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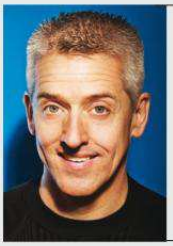
GARAGE

Words *Motor Trend Editors*

ARRIVAL 2018 Dodge Durango 4 R/T Frank Markus



"Thieves enabled us to upgrade our long-term Durango to bad-boy SRT styling backed up with an angry V-8 roar."

EPA CITY/HWY/COMB FUEL ECON 14/22/17 MPG **BASE PRICE** $47,390
PRICE AS TESTED $51,970

Let's try this again. Last March, William Walker welcomed a Granite Gray 2017 Durango GT to our long-term fleet, only to have it stolen in May—lock, stock, key fob, and 25 large worth of photo gear in the back—from a Los Angeles–area restaurant's valet lot. For a hot minute we considered quietly replacing it with a doppelganger and carrying on, but the '18 models were just being announced, and we couldn't resist upgrading to an R/T model with the cool new SRT nose. And because Dodges are less rare and exotic in the brand's hometown (and hence hopefully less of an attractive nuisance than they apparently are in Los Angeles), the replacement vehicle has been entrusted to our Detroit office for safekeeping.

Upgrading from a GT V-6 to an R/T V-8 adds $5,900. Figure the engine is worth $3,995 of that (that's the option cost on Citadel trim levels), with the extra two grand buying the aforementioned angry SRT bodywork (vented hood, blackout grille, sport front fascia), a lowered sport suspension with load leveling, fancier lighting, rain-sensing wipers, parking sensors, Radar Red Nappa sport leather seating (with eight-way power in front), and the big-screen infotainment setup. Our snowbelt geography demanded another ($2,600) "Durango 4" upgrade. An MP 3023 transfer case delivers on-demand variable torque-split four-wheel drive with low-range gearing and a neutral setting. (Take note, flat-tow RVers!) To this already high level of standard equipment we added a tech package (adaptive cruise with collision, blind-spot, and lane departure warnings for $2,495), the trailering group ($995), murdered-out black wheels and mirrors ($695), and a cargo package of roof rails, cross bars, and a cargo cover ($395). At $51,970 out the door, it's $9,195 spiffier than our 2017 GT.

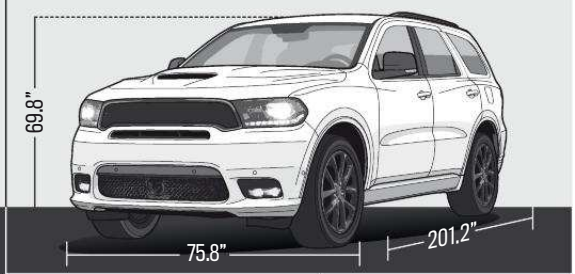
As any good new owner should, we consulted the owners' manual break-in requirements, which were pretty simple: "Drive moderately during the first 300 miles," and "while cruising, brief full-throttle acceleration within the limits of local traffic laws contributes to a good break-in." Can do! Two trips to my lakeside cabin restoration project had our Durango fully ready for action. On those treks we made abundant use of the 47.7 cubic feet of cargo space behind the middle row of seats to haul tools and supplies, but the 43-inch-wide rear deck precludes us from using it for drywall or paneling.

So far we are still grooving on our truck's bad boy looks, the Hemi's ready rumble, and the sport suspension's ride/handling trade-off (reasonably supple on the bumps, respectably flat in

RIDE ALONG FOR UPDATES ON OUR LONG-TERM FLEET

SPECS 2018 Dodge Durango 4 R/T

PAUL LAGUETTE



CO2 emissions 1.16 lb/mile		MT figure eight 27.4 sec @ 0.64 g (avg)*
6.4 sec 0-60 mph	14.9 sec @ 92.9 mph Quarter mile	124 ft Braking distance, 60-0 mph

Vehicle Layout Front-engine, 4WD, 7-pass, 4-door SUV
Engine 5.7L/360-hp/390-lb-ft OHV 16-valve V-8
Transmission 8-speed automatic
Lateral Acceleration 0.80 g (avg)*
Curb Weight (F/R Dist) 5,426 lb (51/49%)
Energy Cons, City/Hwy 241/153 kW-hrs/100 miles

*Results from functionally identical California test car

the curves). To date, our Hemi Durango 4's fuel economy is noticeably trailing that of our 3.6-liter rear-drive GT. After a month of service and about 1,800 miles of driving, we're averaging 15.0 mpg. The GT managed 18.9 mpg over about 7,100 miles. It's tempting to hope our R/T's fuel economy will improve as the engine continues to break in, but the 20 percent drop almost exactly mirrors the difference in EPA combined ratings.

Our Durango's dance card is already filled with scheduled trips to antebellum Vicksburg, Mississippi, northern Canada, and numerous tailgate outings with the TEN party trailer in tow. We'll report on all its surprises, delights, and potential foibles. In the meantime, if you're traveling in some sketchy foreign country and spot a nice Granite Gray Durango GT, send us a snapshot.

The 2018 Legacy, in red, has several nice updates.

2017 Subaru Legacy 2.5i Sport Mike Royer

"A little something for everyone with this refresh. Styling, safety, and an indoor beautification project."

Service life / 10 mo/15,114 mi
Avg CO2 / 0.73 lb/mi
Energy cons / 125 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $140 (oil change, tire rotation, inspection)
Normal-wear cost / $0
Base price / $24,815
As-tested / $28,998

AVG MPG FUEL ECON 26.5 MPG

In what qualifies as next-level product hype, Subaru gave us a Crimson Red 2018 Legacy 2.5i Sport to drive around for a few weeks last month. After 10 months and nearly 15,000 miles on our gray 2017 model, the bright newness of the 2018 definitely seems a little brighter and shinier.

For 2018, Subaru made some styling changes to the Legacy's front and rear and added new LED daytime running lights to give the Legacy a "sportier" look. The changes are not radical enough to be considered a redesign, but the tweaks are a positive change.

Under the hood, the suspension and electric power steering have been retuned in an attempt to give a smoother ride and enhanced feel when driving, again in an effort to be a little sportier.

Even after a few miles I noticed the ride is quieter in the 2018—an improvement on what was already a pretty smooth and quiet ride with our 2017 long-termer. Credit goes to the redesigned side mirrors and sound-insulating glass. Nice work.

Some tech features have been upgraded or added, including reverse automatic braking, steering-sensitive headlights, and the ability to monitor the pressures for individual tires. Nice upgrades that I would've appreciated on the 2017 model over the past several months.

But the real star of this refresh rodeo is the overhauled multimedia display, which takes the center of the Legacy from dated to datable.

Although serviceable, the monochrome screen in the 2017 model has been reinvigorated by adding bolder, more colorful icons for the touchscreen's functions. You notice it right away, and it really livens up the cabin. The small touch goes a long way to making the driving experience more attractive.

Along with the aesthetic makeover, radio and media functions have been tweaked to allow for more intuitive bookmarking and use of the functions you use often. And to the cheers of many on staff, Apple CarPlay and Android Auto have been added, so you don't need to untether your phone when driving.

The old and the upgraded graphics. Much more impressive in person. Promise.

2017 Audi A4 2.0T Quattro Zach Gale

"What a relief—after a quick service visit with some work covered under warranty, our Audi A4's Apple CarPlay functionality works again."

Service life / 4 mo/6,614 mi
Avg CO2 / 0.82 lb/mi
Energy cons / 140 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $0
Normal-wear cost / $0
Base price / $40,350
As-tested / $52,325

AVERAGE FUEL ECON 23.6 MPG

Audi's Virtual Cockpit display gives the A4's cabin a high-tech feel that's almost unrivaled at this price point. Volkswagen is already rolling out a similar feature on two crossovers, but that only takes away a little of the feature's appeal on our long-term Audi. When it comes to tech, our all-wheel-drive 2017 A4 2.0T gets a high grade overall, with just a couple exceptions.

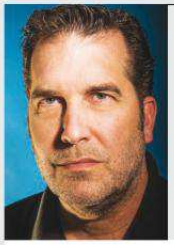
The Virtual Cockpit is a well-executed, fully digital 12.3-inch instrument cluster display. Cool digital instrument clusters are offered by other brands, but if you want your new car to dazzle you, Audi's system is worth considering for the way it combines an easy-to-customize functionality with a slick interface. On the A4, the tech is offered on the top Prestige trim, and I appreciate the various display options. If I'm looking at a map on the 8.3-inch infotainment screen, I can stretch audio info (and the album cover thumbnail image) across the instrument cluster's screen, minimizing the speedometer and tachometer.

Or, after shrinking the tach and speedo, I can take full advantage of Audi's use of Google Earth imagery. Sometimes, as a way to relax on a congested drive home, I'll watch the imagery of city streets and buildings turn to mountains and ocean as I use the steering wheel control to zoom out close to the system's maximum, and the display is filled with an image of our planet as well as stars around it. Of course, this isn't a practical way to use the technology, but if I wanted a practical car, I would have "purchased" the less expensive and more spacious Volkswagen Passat. Virtual Cockpit can be useful by viewing navigation directions and audio info in the car's vast screen space, but what makes it a cool luxury to me is that look-at-how-insignificant-you-are planet view with Google Earth satellite data. As this is written, Audi offers a six-month trial, after which a Connect Prime plan includes the Google Earth imagery and data, along with Inrix XD Traffic data and other features such as a Curfew Alert and remote locking/unlocking. That plan is $199 for six months and $499 for 18 months. If I weren't such a regular user of Apple CarPlay, I might pay that.

Although Audi's own navigation system is easy enough to use, for me, nothing beats quickly getting directions to a place even if I don't know the address. With CarPlay and one voice command using a long press of a button on the steering wheel, my phone and the car's voice-recognition system will usually understand what I want, and we're off.

With this particular A4, however, getting CarPlay to work wasn't always easy. At first, I couldn't figure out why my phone would try to connect via CarPlay for a few seconds and then go back to Audi's MMI system display. Well before my first service, I made an appointment to have a local dealer have a look. After trying a couple other potential fixes, they ordered a new information control module that helps the car recognize when a compatible iPhone is connected via USB. All of the—gulp—$2,839.99 worth of work and parts were covered under the car's four-year/50,000-mile basic warranty.

2017 BMW 530i Mark Rechtin



"A couple electrical gremlins won't undo what is an excellent cruiserweight."

Service life / 9 mo/16,130 mi
Avg CO2 / 0.80 lb/mi
Energy cons / 140 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $0 (oil change, inspection) **Normal-wear cost** / $0
Base price / $52,195
As-tested / $72,135

AVERAGE FUEL ECON 24.1 MPG

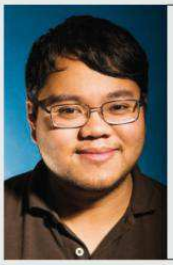
One benefit of owning a BMW is its no-cost maintenance for three years or 36,000 miles—which covers service calls for engine oil, engine filters, brake fluid, cabin micro filters, engine air filters, fuel filters, spark plugs, smart key batteries, and all vehicle checks.

Of course, cynics will say such costs are built into the transaction price. But there's still something nice about going to a dealership for a comprehensive service and not having to reach for your wallet.

In dealing with the local BMW dealership, I was initially informed no service loaner vehicle was available despite having made a reservation several days in advance. The dealership eventually found a no-cost Enterprise loaner, but it was a Nissan. As I was waiting for that paperwork to clear, someone likely ran the VIN and discovered mine was a press-fleet vehicle belonging to BMW. Suddenly, what should roll up but a gleaming 2018 530i with less than 10 miles on it—clearly dealer stock, not a service loaner. I have a feeling that were I not working for *Motor Trend*, I might have been exchanging our $72,000 long-termer for something far less luxurious—not what Joe Public would expect when owning a Bavarian autobahn stormer.

In addition to the 10,000-mile service, the dealer conducted diagnostic tests to check our overly sensitive passenger seat belt warning (no fault was found) and our erratic low-coolant warning (air pockets were found in the cooling system). There also was an open service bulletin (B130217) to check the routing of the fuel line. The full-system inspection found a fault in the sunroof software, which was fixed.

Back on the road, the Bimmer rotated through our staff, including a long weekend with copy editor Mary Kaleta. Mary is new to the idea of free cars so isn't jaded like the rest of us. But that also means she spots things we take for granted. Among her positive observations: the immediacy of the seat heaters, clarity of the head-up display, and helpfulness of the parking-assist system. But Mary also bemoaned the lack of a place to stash her phone, the small visor mirrors, and the occasional door-versus-curbside scrape due to the low-slung sedan's door cutout.



"On the highway, the Tucson's powertrain seems fine, but once you hit city streets, things start to get clunky."

2017 Hyundai Tucson Limited AWD Stefan Ogbac

Service life / 6 mo/12,353 mi
Avg CO2 / 0.84 lb/mi
Energy cons / 147 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $120.35 (oil change, inspection)
Normal-wear cost / $0
Base price / $32,070
As tested / $32,195

AVERAGE FUEL ECON 23.2 MPG

Last July, I drove to San Diego in our long-term 2017 Hyundai Tucson to attend the launch of the 2018 Sonata and Elantra GT. The latter shares the same 1.6-liter turbo-four and seven-speed dual-clutch automatic with our Tucson in Sport guise but makes 26 hp more. In that application, the transmission is smooth, responsive, and snappy even in manual mode, doing exactly what you want. However, in the Tucson, it's like a different unit, slow to respond and laggy. Why such a drastic change between the two cars? It's all in the tuning.

Whereas the Elantra GT Sport has been calibrated for enthusiastic driving, the Tucson is efficiency-minded. On the highway, the powertrain is unobtrusive, but once you hit congested areas, things start to get clunky. At low speeds, the gearbox hunts frequently, shudders, and shifts roughly. You grow to expect but perhaps not accept it after a while; it will remain annoying, and we've driven eco-minded powertrains that are less noticeably clunky. It also doesn't help that the Tucson's throttle response is sluggish, making it feel even more unresponsive. The best solution is to not put your foot down suddenly—the transmission will get confused—and instead ease into the throttle while in traffic to keep it from shuddering. Sport mode also alleviates things and makes city driving smoother.

It doesn't help that despite the economy-minded transmission, it's EPA-rated at 24/28 mpg city/highway with all-wheel drive and 25/30 mpg with front-wheel drive. That's right in line with most of the class but behind the most efficient entries, the Honda CR-V and the Nissan Rogue, both of which are rated 2 to 3 mpg higher, so there's no efficiency gain with the eco-tuned transmission.

The Tucson's clunky transmission will have you reaching for the drive-mode button before long.

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Eco: the new normal and the scene of the fly infestation.

2017 Jaguar F-Pace 35T R-Sport Ed Loh

"I'd argue that a driver new to the vehicle would be surprised to find that Eco mode wasn't actually normal."

Service life / 6 mo/11,787 mi
Avg CO2 / 0.89 lb/mi
Energy cons / 153kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $0
Normal-wear cost / $0
Base price / $57,295
As-tested / $64,3443

AVERAGE FUEL ECON 21.9 MPG

"Hey, sorry, but I spilled a coconut drink in the Jaguar, and after cleaning it up, it still kinda smells fruity. Sorry! I can take it to get detailed if you want."

That was the text social media editor Carol Ngo shot me on a recent Thursday. I think she might have added an upside-down happy face emoji. Accidents happen, so it was no big deal. I noticed the smell but not much else. I just parked it in the garage and left the window cracked to air it out over the weekend. But Monday morning I got into the Jag, and OMG, a swarm of fruit flies!

I texted Carol: "What's up!? What did you spill? There must be some leftover fruit bits. The car doesn't really stink, and I'm not grossed out; it's just the last time I dealt with Drosophila melanogaster was in college."

Carol replied with an apology: "You're kidding?! It was a cup of coconut and sugar cane juice, and it didn't really fit in the cupholder. I made a turn, and it toppled over onto the passenger-seat side. I took out the floormat, washed that, vacuumed as much as I could, and scrubbed the hell out of the carpet with a towel over and over." (Note to Jaguar: Make better cupholders.)

In the end, an expensive trip to a car detailer was not needed. Carol made another pass with a rag and off-the-shelf cleaning supplies, and after a couple more days of parking with the windows cracked (in cooler weather), the fruit fly pestilence abated. The slightly sweet smell of coconuts persists, but there are no complaints there.

Right around the time this happened, I started to explore the other side of the F-Pace's performance toggle switch. Not the checkered-flag speedster setting but Eco mode, which is one tap of the right arrow key away from Normal mode, just before the snow mode. As with Eco modes of other brands, Jaguar's system alters transmission shift points and accelerator pedal response with an eye toward lower fuel consumption and CO2 emissions. Elements of the climate control system, such as seat heaters and an optional heated windshield, are also restricted to conserve energy.

To those who love spirited driving, Eco mode usually means a neutered, no-fun experience. I'm happy to report that relative to other systems I've tested, our F-Pace's green driving experience is not a total killjoy. In fact, whatever performance-reduction measures Jaguar engineers deployed are not immediately noticeable. Yes, the car feels a touch slower, but it's hard to determine where in the cascade of inputs and responses the slowdown occurs. Is it in the gas pedal's initial sensitivity? Maybe. Or is there a quickening of upshifts through the eight-speed transmission. Perhaps.

There are no obvious performance gaps or dead spots, so it's hard to confirm; in fact, I'd argue that a driver new to the vehicle would be surprised to find that Eco mode wasn't actually Normal mode. We'll continue to monitor our F-Pace's performance in Eco and other modes and revisit its ride quality and utility as a surf vehicle in our next update.

The ride is stiff, but the cockpit is comfortable on long drives.

2018 Kia Stinger GT Alex Nishimoto

"I noticed a few people on different occasions taking selfies with the car. Just let that sink in. Selfies. With a Kia. These are strange and wonderful times."

Service life / 2 mo/3,224 mi
Avg CO2 / 0.99 lb/mi
Energy cons / 169 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $0
Normal-wear cost / $0
Base price / $50,100
As-tested / $50,100

AVERAGE FUEL ECON 19.5 MPG

We're just about three months into the Kia Stinger's loan, and public interest in the swoopy four-door continues to be high. These days I get fewer stares and impromptu freeway challenges in the L.A. area, but on a recent trip north where fewer people have seen the newcomer from Kia, the Stinger was once again the center of attention.

The Presidents Day weekend provided an opportunity to test out the Stinger's grand touring chops. A quick jaunt up the coast highlighted many of the things I'd already learned from commuting 40 miles every day. The ride is reasonably comfortable for a sport sedan, and the seats offer good cushioning and support. I usually turn the stop/start feature off in other cars, but the system in this Kia is unobtrusive, so I leave it on.

The 3.3-liter twin-turbo V-6 and eight-speed automatic help the Stinger GT live up to the latter half of its name. Traditional grand tourers offer both speed and comfort over long distances, and this combo is well suited for highway cruising. If you need to pass a slower vehicle, simply press the throttle and enjoy the power of the boosted V-6 and an immediate downshift.

I appreciate all of the Stinger's driver-assist features, but some work better than others. Lane keep assist doesn't work as well here as it does in other cars. The system seems to only make minor corrections to keep you in your lane, and it isn't much help on even the gentlest of bends. When engaged, the system alerts you to put your hands on the wheel if it thinks you're doing something else. It's this function I have the most problem with, as it's way too sensitive. Even with both hands on the wheel, I managed to trigger the alert multiple times, to the point where the system deactivated.

The hatch is great for stowing things but less so for seeing out of. The rear window is narrow, and the car's high beltline means you won't see the headlights of a car directly behind you. Combine this with the thick C-pillars that give the Stinger its characteristic shape, and you end up with some pretty miserable rear visibility. Luckily, a rearview camera and parking sensors come standard, which help make backing up much less stressful.

"I have yet to encounter any single major issue with the Renegade. Just lots of small annoyances."

2017 Jeep Renegade Sport 4X4 Jesse Bishop

Service life / 9 mo/8,332 mi
Avg CO2 / 0.87 lb/mi
Energy cons / 153 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $67.35 (oil change, tire rotation, inspection)
Normal-wear cost / $0
Base price / $20,990
As tested / $26,585

AVERAGE FUEL ECON 22.4 MPG

With our long-term fleet, we aim for about 20,000 miles over the course of a year. Anything less, and we feel like we'll miss out on some of the typical warts a new car might reveal as it ages into a slightly used one. And without exposing potential long-term points of frustration, what's the point of a long-term test?

Unfortunately, with only a few months left I'm still only about halfway there. Nevertheless, I've been behind the wheel enough to notice a few things starting to go awry.

The most obvious has been the buttons. Half the time they just don't work. Not in the sense that they're broken. More like they just feel cheap and are slowly getting worse, and if you don't press them just right, sometimes it doesn't register. This is especially noticeable on those controls mounted on the steering wheel. Trying to adjust the volume, for example, sometimes takes several taps more than it should. A major issue? Not at all. But it's annoying. I've pressed a lot of buttons in my day, and rarely have I experienced this. To be fair, this also happens on other vehicles in this price range, but it's inexcusable there, too.

A similar annoyance lives in the turn signal stalk. In many new cars, you can tap up or down to flash your turn signal a few times before changing lanes. And in many new cars, this works flawlessly. But in the Renegade, I often find this more trouble than it's worth. A driver has to hit the stalk just right. Not enough pressure, and it doesn't register. Too much, and the blinker stays on. The sweet spot is frustratingly small. This is also more of an annoyance than a problem—the feature seems fixing problems that doesn't exist to me—but I can't shake the feeling that it's a minor gripe that could become a major irritation if I were driving this Renegade for another several years.

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Our Mini Clubman S' red and black two-tone exterior treatment and black 18-inch wheels helped it stand out on the road.

2017 Mini Cooper S Clubman All4 Alex Nishimoto

"I'm going to miss the Mini Clubman's funkiness. Goodbye, rear barn doors. Goodbye, LED mood ring. It's been a fun and unique experience."

During my year chaperoning the Mini Clubman, I got a lot of comments and questions about the bigger Mini model, but the most common was, "How do you like it?" Answering that question was always tricky because I do like the Clubman quite a bit. I'd think for a moment how I could justify its price premium, but after a second or two I'd concede: "I like everything about it except the price."

But before we get into the Clubman's value proposition, let's talk about the things it has going for it. The second-most common comment I got on the Clubman was some variation of "nice car." I tend to agree. Even among other quirky Minis on the road, this Clubman S stood out with its two-tone paint job with a deep red metallic hue as the primary color and black accents, including the roof, fenders, mirrors, and 18-inch banana-spoke-style wheels. Swiveling LED headlights and LED taillights with hypnotic concentric rings also helped it to look stylish. The Clubman's long, wagonlike profile gave it a unique look that's still distinctly Mini but slightly more mature than the hardtop.

Service life / 14 mo/23,122 mi
Base price / $30,300
Options / Technology package ($1,750: rearview camera, rear park distance control), Sport package ($1,500: Dynamic Damper Control, LED foglights), JCW Interior package ($400: JCW leather steeering wheel, headliner; sport automatic transmission ($1,750), Harman Kardon premium system ($750), Comfort Access keyless entry ($500), Blazing Red metallic paint ($500), satellite radio w/ one-year sub. ($300), LED headlights w/ cornering ($250), 18-inch Star Spoke Black wheels ($250), roof rails ($250), split-folding rear seat ($250)
Price as tested / $38,750
Avg fuel econ/CO2 / 23.2 mpg/0.84 lb/mi
Problem areas / None
Maintenance / $0 (2-oil change, inspection; in-cabin air filter)
Normal-wear cost /$0
3-year residual value* / $25,300
Recalls / None

REAL MPG CITY/HWY/COMB FUEL ECON
23.2/36.3/27.7 MPG

*IntelliChoice data; assumes 42,000 miles at the end of 3 years

I wasn't a fan of Mini interiors before, but the quirky toggle switches and round center stack display grew on me.

In addition to looking sharp and attracting more attention than expected, this Clubman S All4 never failed to put a smile on my face. A well-sorted eight-speed automatic transmission makes the most of the Mini's 2.0-liter turbocharged I-4's 189 hp and 207 lb-ft of torque, downshifting quickly to an appropriate gear when the right pedal is applied. Clicking the gear selector ring over to Sport mode is said to do a number of things, but the most noticeable include heightening throttle response and stiffening the adjustable dampers (when equipped). I wouldn't use "go-kart handling" to describe the Clubman S All4, but it's certainly a lot of fun to drive on a twisty road.

My two-week road trip in the Mini proved it's good not only for commuting and weekend canyon runs but also for long-hauling—at least when you have only two people plus their luggage to haul around. The Clubman's longer wheelbase helped its ride quality on long stretches of highway, and the sport bucket seats provided comfort and support where needed. The rear barn doors weren't as practical as a traditional liftgate, but they added character and came in handy when I wanted to throw something in the back quickly. The Clubman averaged 23.2 mpg while it was in our care—below its 26-mpg EPA combined average.

During its 14-month stay with *Motor Trend*, the Clubman racked up 23,122 miles. Maintenance over those miles was covered under the Mini Scheduled Maintenance Program, which is complimentary with all new U.S. Mini models. The program offers free regular maintenance—including inspections, oil and filter changes, brake fluid replacement, tire rotations, cabin air filters, spark plugs, and engine air filters—for three years or 36,000 miles, whichever comes first. It's an especially good deal if you plan on leasing.

With that said, we paid nothing for any of the Mini's regular services. Outside of regular maintenance, there were two things we took the Mini in for: a four-wheel alignment to fix a tendency to pull to the left (possibly due to hitting a curb) and a software update to address a slow-running clock and door lock issue. Mini also issued two service bulletins, which were performed gratis: one to remove excess material from the curtain airbags and one to reprogram the engine control unit. Initially, upkeep

for your Mini will be cheap if not completely free, but after the complimentary maintenance runs out, expect to pay premium car prices for service. We would have paid $628.04 for everything without the program, according to a quote from one dealership. That's not much less than our long-term 2014 Infiniti Q50S ($651.13) and a lot more than our 2016 Volkswagen Golf Sportwagen ($276.71).

The 2017 Mini Clubman S All4 starts at a reasonable though still-pricey-for-a-compact $30,300, but our tester came loaded with $8,450 worth of options to an eye-popping $38,750. You don't have to choose everything on the options list to get a good car, but many of them help it achieve that premium feel that sways people to choose a Mini over a compact from a more mainstream brand.

Mini made its rearview camera and parking sensors standard across its lineup for 2018, but in 2017 those features were only included if you chose the $1,750 Technology package. Meanwhile, LED headlights and LED foglights are bundled with Dynamic Damper Control in the $1,500 Sport package. Having to pay $750 for the Harman Kardon audio system isn't surprising, but the $300 charge for satellite radio capability (with a one-year subscription) is. If you don't want to row your own gears, Mini will charge you $1,750 for its eight-speed automatic. The nickel-and-diming continues with $250 for 40/20/40 split-folding rear seats, $500 for hands-free keyless entry, and $500 for heated front seats (not equipped on this car).

Being a semipremium compact wagon, the Mini doesn't have many direct competitors. The larger Volkswagen Golf Sportwagen might not be a perfect match, but it's the closest thing we can think of. You can only get VW's 4Motion all-wheel drive on the bare-bones Sportwagen S, but a Golf Alltrack SEL (the Sportwagen's crossover cousin) equipped comparably to our Clubman S All4 undercuts it by about $2,000 and includes driver-assistance features the Mini doesn't offer. Forward collision warning, automatic emergency braking, and adaptive cruise control can be had with Mini's $4,500 Fully Loaded package, but other safety features such as blind-spot monitoring, lane departure warning, and lane keep assist aren't available.

For most of the year I drove the Clubman, I couldn't help thinking I could get a base Alfa Romeo Giulia, our 2018 Car of the Year, for about the same price. In fact, there's a lot you could get in this price range that would top the Clubman in fun, practicality, or premium feel—but probably not all three in the same car.

Plus, there's an X-factor that this car and other Minis have, which BMW has built a cult following around. The rowdy, slightly rebellious, fun-loving attitude the brand has become associated with might be all marketing hype, but it does come through in its products. You can hear it in the Clubman's exhaust pops and subtle blow-off valve venting noise. You can also see and feel it in the Mini's unorthodox interior, which uses toggle switches and has an LED ring around the infotainment screen that lights up and changes color depending on driving mode and engine speed. These touches won't impress and amuse everyone, but they call to a specific type of driver like a dog whistle.

If you're looking for pure performance, value, or utility, I would recommend you shop elsewhere. But if you want something that's equal parts fun-to-drive runabout and fashion accessory, the Mini Cooper S Clubman All4 might be for you. ■

2017 Mini Cooper S Clubman All4

POWERTRAIN/CHASSIS	
DRIVETRAIN LAYOUT	Front-engine, AWD
ENGINE TYPE	Turbocharged I-4, alum block/head
VALVETRAIN	DOHC, 4 valves/cyl
DISPLACEMENT	121.9 cu in/1,998cc
COMPRESSION RATIO	11.0:1
POWER (SAE NET)	189 hp @ 5,000 rpm
TORQUE (SAE NET)	207 lb-ft @ 1,250 rpm*
REDLINE	6,500 rpm
WEIGHT TO POWER	18.3 lb/hp
TRANSMISSION	8-speed automatic
AXLE/FINAL-DRIVE RATIO	3.20:1/2.15:1
SUSPENSION, FRONT; REAR	Struts, coil springs, anti-roll bar; multilink, coil springs, anti-roll bar
STEERING RATIO	14.2:1
TURNS LOCK-TO-LOCK	2.4
BRAKES, F; R	12.1-in vented disc; 11.0-in disc, ABS
WHEELS	8.0 x 18-in cast aluminum
TIRES	225/40R18 92Y Bridgestone Potenza S001 (RFT)
DIMENSIONS	
WHEELBASE	105.1 in
TRACK, F/R	61.2/61.2 in
LENGTH X WIDTH X HEIGHT	168.3 x 70.9 x 56.7 in
TURNING CIRCLE	37.1 ft
CURB WEIGHT	3,451 lb
WEIGHT DIST, F/R	58/42%
SEATING CAPACITY	5
HEADROOM, F/R	40.2/38.0 in
LEGROOM, F/R	41.4/34.3 in
SHOULDER ROOM, F/R	54.7/52.8 in
CARGO VOLUME BEHIND F/R	47.9/17.5 cu ft
TEST DATA	
ACCELERATION TO MPH	
0-30	2.2 sec
0-40	3.4
0-50	5.0
0-60	7.0
0-70	9.4
0-80	12.4
0-90	16.0
0-100	20.4
PASSING, 45-65 MPH	3.9
QUARTER MILE	15.4 sec @ 88.4 mph
BRAKING, 60-0 MPH	107 ft
LATERAL ACCELERATION	0.89 g (avg)
MT FIGURE EIGHT	26.5 sec @ 0.67 g (avg)
TOP-GEAR REVS @ 60 MPH	1,700 rpm
CONSUMER INFO	
BASE PRICE	$30,300
PRICE AS TESTED	$38,750
STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	Dual front, front side, f/r curtain
BASIC WARRANTY	4 yrs/50,000 miles
POWERTRAIN WARRANTY	4 yrs/50,000 miles
ROADSIDE ASSISTANCE	4 yrs/Unlimited miles
FUEL CAPACITY	13.2 gal
EPA CITY/HWY/COMB ECON	22/31/26 mpg
ENERGY CONS, CITY/HWY	153/109 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.77 lb/mile
REAL MPG, CITY/HWY/COMB	**23.2/36.3/27.7 mpg**
RECOMMENDED FUEL	Unleaded premium

*221 lb-ft with temporary overboost

EQUA REAL MPG

The Mini's 189-hp turbo-four combined with eight-speed auto was plenty of fun.

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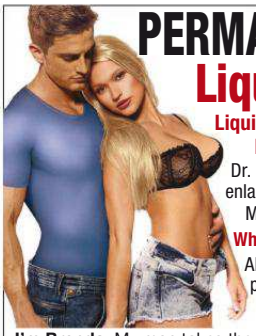

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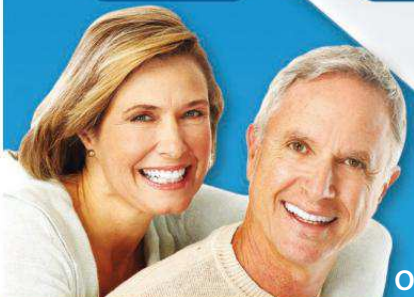

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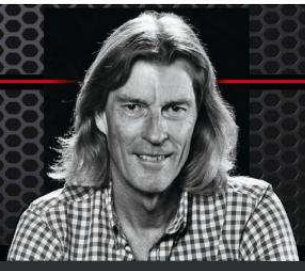
The Big Picture



LEGENDS REUNITED

MCLAREN AND SENNA TOGETHER AGAIN, FOR THE FIRST TIME

McLaren Senna. Magic, right there. Ayrton Senna became a three-time world champion at the wheel of a McLaren Formula 1 car in just four years. Now, almost a quarter century later, the two names are reunited.

One of the greatest F1 drivers of all time, Senna's understanding of vehicle dynamics was the stuff of legend along pit lane. He could talk for an hour about a single lap of Monaco, insiders recall, describing everything that the car was doing, what was happening, and why.

Senna dabbled in road car development while at McLaren, working with Honda (then the McLaren F1 team's engine supplier) on the final chassis tune of the original NSX. Had he not been tragically killed in the 1994 San Marino GP at Imola (after he'd left McLaren to drive for rival team Williams), the experience might have spurred involvement in other road car projects.

"It was Ayrton's dream to have a car with his name on it," says nephew Bruno Senna, himself a former F1 driver. And now he has.

The McLaren Senna is not pretty. But if you believe form should follow function, it's beautiful. Every dramatic curve, every nuanced surface, every tiny detail has earned its place on this car for one simple reason, says McLaren: to make the Senna the most exciting road car you can drive on a racetrack.

That's quite a mission statement in an era of impressive track-focused road cars like Porsche's 911 GT2 RS, Lamborghini's Huracán

Performante, and the Mercedes-AMG GT R. But the McLaren Senna's got game.

The Senna's mid-mounted 4.0-liter twin-turbo V-8 develops 789 hp at 7,250 rpm and 590 lb-ft from 5,500 to 6,700 rpm. McLaren claims it will sprint from 0 to 60 mph in 2.7 seconds, but as we've just had a McLaren 720S post a stunning 0–60 time of 2.5 seconds in our instrumented testing, that Senna estimate might be on the conservative side. Even so, spec-sheet mavens—who'll also note the Senna's 211-mph top speed is identical to that of the 720S, the car it's based upon—will ask the question: Why spend more than three times the 720S' sticker price—an eye-watering $958,966, to be precise—for a car that seems no quicker? Two reasons: low weight and high downforce.

McLaren claims the lightest version of the Senna weighs a feathery 2,641 pounds without fluids. Call it about 2,900 pounds gassed and ready to go, and the Senna is at least 200 pounds lighter than a 720S. Simple physics suggests that weight advantage, combined with its grippier, specially developed Pirelli P Zero Trofeo R tires and latest-generation CCM-R carbon-ceramic brakes, means it should be significantly quicker into, through, and out of corners than the 720S.

But wait, there's more. The active aero blades tucked in the gaping apertures under the headlights and the giant active rear wing towering over the Senna's low-slung hindquarters help deliver a staggering 1,764 pounds of downforce at 155 mph. The computer-controlled aero blades and wing also automatically trim themselves to maintain that level of downforce right through to 211 mph. Under brakes the aero blades bleed off downforce at the front of the car while the rear wing moves to increase downforce on the rear axle, ensuring balance and stability.

McLaren engineers claim the Senna generates the highest downforce of any road car in the company's history—40 percent more than a P1—and delivers 30 percent more lateral grip through corners.

We'll know for sure if the McLaren Senna is the ultimate track rat when we get our hands on one next year for our annual Best Driver's Car test at Laguna Seca.

For now, though, ponder this: Porsche's stunning 911 GT2 RS holds the Nürburgring Nordschleife road car record with a blistering 6:47.3 lap, but the alpha dog 911 has almost 100 fewer horses than the Senna, weighs at least 200 pounds more, and generates 43 percent less downforce at top speed.

You don't have to be Ayrton to do the math. ■

BEASTLY BEAUTY The wing weighs just 10.7 pounds yet delivers 1,100 pounds of downforce.

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To: FCA US LLC, regarding its Dodge brand

Date: November 30, 2016

This letter verifies that on Monday, November 21st, 2016 at Gainesville Raceway in Gainesville, Florida, the Dodge Challenger SRT Demon ran the quarter mile in an elapsed time of 9.650 seconds at 140.09 miles per hour. Both the elapsed time and the speed on this run exceeded the limits on 2008 OEM model-year and newer production cars and therefore violate our rules. The car exceeded our limits of 9.99 seconds and 135 miles per hour. Therefore, before this car can be run again at an NHRA Member Track, it must be brought into compliance with the rules and regulations found in Section 4 of the NHRA Rulebook. If you have any questions concerning this letter or the rules in Section 4 of the NHRA Rulebook, please contact me.

Sincerely,

Glen Gray
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Vice President, Technical Operations

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